Children's Living Arrangements and Gender Differences in Parental Support in Rural Malawi

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March 2008 Draft
Prepared for the Annual Meeting of the Population Association of America
New Orleans, April 19, 2008

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Introduction

The prevalence and consequences of orphanhood in sub-Saharan Africa have occupied much space in the research literature. As the HIV/AIDS epidemic grows in magnitude, so too does concern about the well-being of children whose families are directly impacted by the epidemic. Little attention, however, is given in the academic literature to the living arrangements of children *prior* to the HIV/AIDS epidemic or how these existing patterns and practices may facilitate or complicate the ways in which extended families are able to absorb orphaned children. By focusing simply on the current situation, and ignoring history, we are at grave risk of misinterpreting the impact of the epidemic and the coping mechanisms used by families and communities to deal with the consequences of the disease.

Child fostering has long been recognized as a risk coping mechanism used by African households to offset economic or demographic hardships, to take advantage of resources available through extended kin networks, and to redistribute the costs and benefits of childbearing across the extended family (Isiugo-Abanihe 1985; Akresh 2005). Although most research on the practice of child fostering has focused on West Africa, the practice is common throughout sub-Saharan Africa, including the AIDS-burdened areas of East and Southern Africa. As Mason (1997) notes, child fostering serves as a post-natal means of controlling family size and distributing the costs of childrearing.

This fostering can be "voluntary" or "crisis"-driven, where the latter is brought about by spousal deaths, divorce, or extreme hardship (Madhavan 2004; Isiugo-Abanihe 1985). Evidence from West Africa suggests that child fosterage in this region has predominantly been voluntary, used as a mechanism for families to strengthen social connections and kinship ties, as well as to share the costs of childbearing (Isiugo-Abanihe 1985; Alber 2004; Akresh 2005). In contrast, studies that consider child fosterage patterns in southern Africa prior to the HIV/AIDS epidemic (Madhavan 2004; Monasch and Boerma 2004; van Blerk and Ansell 2006) note that child fostering likely emerged in this region as a response to the patterns of seasonal labor migration and family division that began during the colonial period. Although recent research on patterns of orphanhood associated with HIV/AIDS has begun to consider the role of local marriage and migration patterns (e.g. Monasch and Boerma 2004; Hosegood et al. 2007), the broader literature

on HIV/AIDS-related orphanhood often fails to contextualize the patterns of childrens' living arrangements in the absence of HIV/AIDS.

In this paper, we propose to examine the patterns of children's living arrangements in rural Malawi, with a focus on the family and individual characteristics that predict the likelihood that a child will be co-resident with their living mother or father. This analysis uses data from the 2004 and 2006 survey rounds of the Malawi Diffusion and Ideational Change Project (MDICP), a longitudinal survey that has been following women and their spouses since 1998. HIV prevalence in the MDICP is lower than estimates at the national level (7 percent versus 12 percent), which is related to both the sampling of respondents from districts that have relatively low HIV prevalence and to the rural nature of the MDICP sample. Since the epidemic has had a less intense effect on this sample, it provides an excellent opportunity to examine the living arrangements of children in circumstances unrelated to HIV/AIDS, as well as those of children whose parents have recently learned their HIV status or experienced a prolonged illness that may have been interpreted as a signal of infection. We begin our analysis with an overview of changes in fostering and orphanhood nationally using three Malawi Demographic and Health Surveys that cover a period of thirteen years where HIV prevalence and AIDS-related mortality rose dramatically. We then use MDICP data to examine the likelihood that children are co-resident with their living mother or father and focus on the possible relationships between parental co-residence and family stability, parental health, and parental knowledge of their HIV status. Finally, we use the findings to consider what resources may actually be available to children who have living but non-coresident parents and how the emerging orphan crisis in Malawi may be contextualized within this system of arrangements.

HIV/AIDS and Children's Living Arrangements

Malawi is an ideal context for examining the role of family stress and the AIDS epidemic in transforming children's living arrangements because of its high HIV prevalence, variety of lineage systems and concentration of the population in rural areas. During the twenty years since the first diagnosis of HIV in Malawi, HIV and AIDS spread rapidly, before beginning to stabilize in the late 1990s. Current estimates, which depend on the source of the data, vary from 12 to 14 percent for the national population and from 7 to 11percent for rural Malawi, where 85 percent

of the population live (Bula et al. 2007; Macro 2004; UNAIDS 2004). In Malawi, as elsewhere in East and Southern Africa, AIDS deaths began to elevate mortality rates as long ago as 1990 (Timæus and Jasseh 2004). Life expectancy, which had historically been low even by sub-Saharan African standards, rose modestly to 45 years in 1985, but has since fallen back to 40 years (UN 2003). The impact of the epidemic will be experienced differentially across Malawi, however, due to significant geographic variation in HIV prevalence. While several districts in southern Malawi have HIV prevalence higher than 20 percent, many districts in the northern and central regions report HIV prevalence closer to 5 percent (Macro 2004).

Certainly, rising mortality due to AIDS in a country where one eighth of reproductive age adults are HIV positive will increase the number of children orphaned and fostered by others. The best available data for examining trends come from the Malawi Demographic and Health Surveys, a series of nationally representative household surveys that collect data on household living arrangements, reproductive behavior and child health. Although these data provide a clear portrait of children's orphanhood status, they do not include information on cause-specific mortality; therefore, parental deaths due to HIV/AIDS cannot be disentangled from deaths due to other causes. Table 1 shows that the percentage of children who have lost at least one parent increased from 9.9 percent in 1992 to 13.3 percent in 2004. Whereas the proportion of paternal orphans, children who have only lost their father, increased over this period from 5.7 to 7.8 percent, the proportion of maternal orphans, children who have only lost their mother, actually declined slightly from 3.1 to 2.6 percent. The change in maternal orphans is likely explained by the growth in the proportion of double orphans, children who have lost both their mother and their father. This level of orphanhood is among the highest in sub-Saharan Africa (Bicego et al. 2003), although the geographic distribution of orphans within Malawi is likely to be highly varied.

--Table 1 about here--

While orphanhood remains high, a far greater proportion of children live away from one or both of their living parents. Almost 87 percent of children in 2004 had two living parents, yet

only 59 percent of children actually lived with both parents. Table 2 shows that the second most common living arrangement in Malawi is for children to live with their mother, but not with their father. From 1992 to 2004, the percentage of children who lived with their mother only remained relatively constant around 20 percent. In contrast, very few children live only with their father. The percentage of children who live with neither parent increased over this period, from 15.2 to 18.5 percent. Across the time period, this percentage is higher than the total level of orphanhood suggesting that many children live apart from both parents, even when their parents are alive. Indeed, Table 3 shows that three quarters of children who do not live either parent in 1992 are not orphans (maternal, paternal or double), although the frequency of this declines with time. This is consistent with other research on children's living arrangements in southern Africa, which found that a quarter of non-orphaned children in Botswana, Namibia and South Africa did not live with either parent (Monasch and Boerma 2004). If the living arrangements of non-orphaned children are assumed to determine the living arrangements of orphans (Monasch and Boerma 2004), then it is important to develop a full understanding of the residential patterns present in communities that have not yet experienced the full force of the epidemic.

--Table 2 about here--

--Table 3 about here--

One reason children do not live with one of their parents is divorce. Divorce is common throughout eastern and southern Africa, and Malawi has one of the highest rates in the region, with 40 to 50 percent of marriages ending within the first 15 years (Reniers forthcoming). Recent research from rural Malawi shows that marital dissolution may be increasing as a result of HIV/AIDS, in part because women use divorce as a strategy to mitigate their HIV risk (Smith and Watkins 2005; Reniers forthcoming). Very little is known about what happens to children following parental divorce. Research from Senegal found that women were more likely to foster out their children when they faced a change in their marital status or if they had recently migrated, calling on their extended kin network to ensure their children's well-being during a

period of transition (Vandermeersch 2002). Likewise, women in Benin often organized child fostering arrangements prior to a divorce in order to secure future contact with children (Alber 2004). If a woman's divorce is followed by remarriage, qualitative data from Malawi suggest that her children are often not welcomed by the new husband and live elsewhere, most often with her parents (Grant, n.d.).

Given the high rates of divorce, one might expect traditional descent systems to influence whether a child is more likely to live with their biological mother or father after marital dissolution, such that children in matrilineal descent systems are more likely to live with their mother or their mother's relatives while children in patrilineal descent systems are more likely to live with their father or their father's relatives. Evidence of intergenerational transfers from adults to their aging parents and lateral relatives in Malawi indicate that traditional descent patterns continue to influence wealth flows, albeit with significant deviations in response to urgent need (Weinreb 2002).

Evidence also suggests that child migration away from the parental household may occur as a means of coping with illness. Although a considerable literature addresses the living arrangements of orphans in sub-Saharan Africa, relatively few studies have addressed the likelihood that a prolonged period of illness may itself prompt parents to send a child to live with other relatives (Ansell and van Blerk 2004). The prolonged illness of a household member, in particular a productive adult, may have a significant impact on household income, labor patterns, and resource allocation. These changes in the household economy, in turn, have been shown in Tanzania to have a more significant negative impact on children's schooling outcomes than the subsequent death of a parent (Ainsworth et al. 2005). Qualitative evidence from Malawi suggests that some parents send children to live with other relatives, in order to mitigate the negative impact on schooling outcomes (Ansell and van Blerk 2004). Parents who are experiencing a prolonged illness may be motivated to send their children to live with other relatives not only to reduce the negative impact on children in the short term, but perhaps also as a strategic means of establishing a more permanent child fostering arrangement, should the illness prove to be fatal. In rural Malawi, relatively few individuals know their HIV status, so prolonged illnesses are likely interpreted as a signal of HIV infection (Watkins 2004; Watkins et al. 2007).

Just as a prolonged illness may prompt a parent to make arrangements for other family members to care for their children, parents who have recently learned that they are HIV-positive may also be motivated to preemptively make arrangements for their children in advance of their illness or death. Likewise, one would expect that parents who know that they are HIV-negative might be more likely to be co-resident with their children, since they may have a greater sense of security about their future and its implications for their children's well-being. The role of knowing one's HIV status has thus far not been examined in the literature on children's living arrangements and orphanhood in sub-Saharan Africa.

Three main hypotheses guide this work: (1) the fostering out of non-orphans is widespread in Malawi, providing a template for arrangements for children who are fostered due to AIDS; (2) fostering is a gendered process, and will vary by patterns of descent; and (3) HIV/AIDS and its consequences for families and communities are influencing the extent and nature of this type of fostering. We suspect that HIV positive parents may act preemptively to make fostering arrangements for their children before the onset of illness.

Data and Methods

Our analysis uses data from the Malawi Diffusion and Ideational Change Project, a longitudinal survey that has followed women and their spouses since 1998, to examine both the likelihood that children are co-resident with their living mother or father and the parental and household characteristics that predict co-residence. We restrict our analysis to the 1,508 women and 1,124 men interviewed in 2006 who report a total of 7,379 biological children aged 0 to14 at the time of the survey. Data were collected in three rural districts representing the three main regions of Malawi. In Rumphi in the north, most respondents practice patrilineal descent systems and residence is predominantly patrilocal; in Balaka in the south, most respondents follow a matrilineal descent system and residence is predominantly matrilocal, and in Mchinji in the central part of the country, both inheritance and residence patterns are mixed between matrilineal and patrilineal systems (Mtika and Doctor 2002).

We explore the family and individual characteristics associated with child co-residence with a living parent. Throughout the remainder of this paper, we will refer to child "co-residence" or "non-residence" rather than "child fostering", because we are unable to discern

from the data whether a non-resident child is currently living with the other living parent (e.g. in cases of divorce) or with someone other than the biological parents (e.g. actual child fostering). Our definition of child co-residence includes children who currently live in either the same household or the same compound as their living parent. Children who live in the same compound but not the same household as their parent are assumed to have regular contact with their parents and to be more likely to share resources with their parents, distinguishing them from children who live elsewhere.

We use data from the third and fourth survey rounds, collected in 2004 and 2006. The 2006 survey round differs from previous years; in addition to collecting data on all household members, respondents were instructed to list any biological children who lived elsewhere. In many cases, these were the adult children of the respondent who married and left the household or migrated for work. However, the survey found that four percent of biological children under age 15 were reported by their mother as non-resident and 13 percent were reported by their father as non-resident. These numbers are substantively lower than what is found in the 2004 Malawi Demographic and Health Survey (DHS) (Figure 1), where 16 percent of children under age 15 are not co-resident with their living mother and 31 percent are not co-resident with their living father. We believe that most of this dissimilarity can be explained by differences in the sampling design of the MDICP and DHS. As mentioned above, all information on child co-residence in the MDICP is collected from living biological parents. In contrast, the cross-sectional DHS collects data at the household level thus focusing on children in the household where they currently live. To the extent that parents omit non-resident children from the family listing or claim that non-resident children are actually regular household members, the MDICP method will underestimate the prevalence. The longitudinal nature of the MDICP also introduces bias. For the most part, the parents interviewed in 2006 have been successfully followed since 1998[1]; however, amongst those lost to follow-up, two of the most significant sources of attrition from the sample are death and migration related to divorce (Bignami Van-Assche et al. 2003; Anglewicz et al 2007). If child non-residence serves as a means for families to cope with a negative economic shock, such as the death of a parent or separation of households following a divorce, out-migration due to death or divorce will also lead to a lower observed prevalence of

[1] A sample of unmarried adolescents was added to the sample in 2004. In 2006, these respondents account for 2.7 percent of mothers and 3.6 percent of fathers reporting children under age 15.

child non-residence in the remaining sample. Because parents have to be alive to report children in the MDICP, MDICP data will not contain dual orphans and will under-represent maternal and paternal orphans.[2]

--Figure 1 about here--

Furthermore, HIV prevalence is considerably lower in the rural 2006 MDICP sample than in the nationally-representative 2004 DHS, 8 and 12 percent respectively. While a portion of this difference can be attributed to HIV-related out-migration from the MDICP sample (Anglewicz 2007), the majority of this difference is related to an actual lower HIV prevalence in the communities sampled by the MDICP. In Malawi, as elsewhere in sub-Saharan Africa, HIV prevalence is substantially higher in urban areas than in rural ones (UNAIDS/WHO 2004). Therefore, one would expect child non-residence due to the death of one parent or to HIV-related divorce to have less impact in the MDICP than in the DHS. Finally, there may be real differences in the prevalence of child non-residence between the MDICP and DHS due to minimal geographic overlap of sampled districts.

Despite these caveats, the MDICP is a rich data source for analyzing patterns of child non-residence and has numerous advantages over the DHS. In particular, the listing of non-resident children by their biological parent, rather than their foster parent, allows a direct examination of how parental and family characteristics are associated with child co-residence.

Model Specification

The multivariate analysis focuses on the likelihood that children are co-resident with their biological parents, with separate models for mothers and fathers, and children as the units of analysis. Nested logistic regression models (Tables 6 and 7) evaluate the association between children's co-residence and selected family and child characteristics. These models take advantage of the full sample, with standard errors adjusted for household clusters of children.

[2] Although the MDICP does collect information on non-biological children (i.e. "fostered" children) who live within the household, it does not record the orphanhood status of these children nor does it collect information on the natal household of these children.

All models control the biological parent's current socio-economic status, including whether the house is constructed from fired bricks, whether the household owns any livestock (goats or cattle), and the parent's educational attainment. Housing material is taken as a proxy for the household's long term socio-economic status, whereas livestock represent a more liquid asset that a family could sell in order to mediate the effects of negative economic shocks. All models also include the parent's ethnicity, including the Yao, Chewa, Tumbuka, and other groups (Lomwe, Ngoni, Sena, Tonga, Senga). The Yao practice matrilineal descent and residence, and are primarily located in Balaka, the southern district in the sample. The Chewa are in the process of transitioning from matrilineal to patrilineal descent and are primarily located in Mchinji, the central district. The Tumbuka practice patrilineal descent and residence and live in Rumphi, the northern district. The remaining ethnic groups are distributed across the three regions. The models also include the child's age and sex.

In addition to these household and child characteristics, the nested models add several parental characteristics that we hypothesize are associated with child non-residence. First, we add an indicator of whether or not the parent was sick for more than three months in the past year. Second, the models include a measure of the parent's marital status. For mothers, this is an indicator of whether the mother is married to the child's biological father, is not currently married, or has remarried following divorce or widowhood. For fathers, the practice of polygyny makes it difficult to determine in the data whether a man is currently married to the mother of a given child; therefore, for men we use an alternate measure of whether the respondent has ever divorced. We also include an indicator of whether the parent currently lives in a household practicing polygyny.

Finally, we include a measure of the parent's knowledge of their HIV status. In 2004, all respondents were given the opportunity to take a saliva-based HIV test. Results were made available several weeks later at temporary counseling centers distributed across the sample communities. The variable used in this model indicates whether the respondent learned that they were HIV negative, learned that they were HIV positive, or does not know their HIV status, either because they refused testing in 2004 or chose not to receive their test results.

Results

Table 4 presents descriptive characteristics for the 1506 women and 1124 men who report children under the age of 15. The sample is evenly divided among the three MDICP sites. The overwhelming majority of parents are married, particularly men because of the sampling procedure used by the study, and 16 percent of men are polygamous. Five percent of women and three percent of men in this subsample learned that they were HIV positive in 2004 when testing was offered through the project. Table 5 describes the analytic sample—children under the age of fifteen of MDICP respondents. In total, 4,120 children were listed by their biological mothers in the sample and 3,464 by their biological fathers. Although these two samples of children are overlapping, such that some children are reported by both their mother and their father, we are unable to link children across datasets.

--Table 4 about here--

--Table 5 about here--

The multivariate analyses examine the likelihood that children are co-resident with their biological parents, with models presented separately for mothers (Table 6) and fathers (Table 7). As would be expected, the likelihood of a child living with his/her parents declines significantly with the child's age. However, contrary to findings elsewhere in sub-Saharan Africa (e.g., Akresh 2005, for Burkina Faso; Alber 2004, for Benin), there is no significant difference in co-residence by the child's sex. Parental wealth is positively associated with children living with the parent who reports them, although for mothers the association becomes non-significant in Models 2-4 when the key independent variables are introduced into the analysis. A child is more likely to live with their father if the father owns liquid assets such as cattle or goats. Furthermore, parents' education is not significantly associated with the likelihood that children are co-resident with their mothers or fathers.

--Table 6 about here--

--Table 7 about here--

As we hypothesized, parents' ethnicity strongly predicts whether children live with their mothers or fathers. Children are more than twice as likely to live with their mother if she is Yao, as compared to Chewa, whereas children whose fathers are Yao are significantly *less* likely to be co-resident with them. In contrast, children are signficantly more likely to live with their fathers if he is Tumbuka, although this is non-significant for mothers. Given that the Yao practice matrilineal descent and the Tumbuka practice patrilineal desceent, this is the pattern that we would expect if descent systems continue to play a strong role in governing children's living arrangements.

Model 2 tests for the role of marital status in predicting living arrangements. When a child's mother is not married to the child's father, the child has one-third the odds of living with his mother. Even more striking is that children whose mothers have remarried have less than 20 percent the odds of living with her relative to the children of women are still married to the child's father. Similarly, the children of divorced fathers—as well as polygamous fathers—are significantly less likely to reside with their father. These findings are consistent with qualitative evidence collected by the authors, in which parents describe sending children to live with their grandparents during the period following a divorce.

Children whose mothers have been ill in the past three months have one-third the odds of living with their mothers (Model 3). The relationship between father's illness and residence operates in the same direction but is weaker and not statistically significant. Maternal health remains significant when mother's knowledge of her HIV status is added in Model 4. While maternal knowledge of HIV status is not significantly associated with children's living arrangements, children whose fathers learned they were HIV positive or did not get their test results in 2004 are less likely to live with their father than children whose fathers received a negative test result. In this dataset, parental health status is not correlated with knowledge of one's HIV status, so these two variables are probably capturing two different dimensions related to health. Given that mothers serve as the primary caregivers for children, their prolonged illness would have a direct effect on the supply of household labor for childrearing. If no one else in the household is able to assume this role, one would expect for children to be sent to live with other relatives during periods of prolonged illness. In contrast, fathers participate relatively little in

childcare, and thus, as one would expect, their experience of prolonged illness is not significantly associated with child co-residence. Knowledge of one's HIV status, however, informs parents about their future situation. In a setting where people attend an average of three to four funerals a month (Smith and Watkins 2005), people understand what it ultimately means to be diagnosed with HIV. Father's knowledge of being HIV positive may be significant for paternal co-residence if men are using this information, or the lack thereof, to plan for the future. The lower likelihood of co-residence for children whose fathers learned they were HIV-positive may indicate that fathers are making child fostering arrangements before they become severely ill, although we are unable to directly test this hypothesis.

Discussion

The regularity with which child fostering occurs across the continent makes African fostering distinct, but Africa is diverse and the reasons for fostering vary widely. There are a number of reasons why children do not live with their parents in Malawi. Death, divorce, and educational opportunities all lead to changes in household composition and children's residence. Understanding the residential patterns of children is key to understanding household strategies to mitigate shocks, adjust to changing situations, and possibly gain advantage.

While orphanhood is real and increasing due to AIDS in Malawi, there is also a strong tradition of children living away from their parents in this context. As orphanhood increased, there was little change in the proportion of children living with both parents or living with only their mother or their father (see Table 2). What did change concomitantly with orphanhood was the compostion of children who lived apart from both of those parents, with a notable shift away from fostered children with two living parents to fostered children who were double orphans (see Table 3). This may indicate that "crisis-led" child fostering, such as that described in this analysis, may be becoming the dominant fostering arrangement at the expense of "voluntary" fostering. This analysis was unable to examine other motivations for child non-residence, such as the pursuit of educational opportunities in other communities or children's migration in response to the labor needs of other households in the extended kin network, although our qualitative data (Grant n.d.) find that both forms remain common. However, the national level data from the Demographic and Health Surveys suggest that as the HIV epidemic raises the

prevalence of "crisis-led" fostering situations, other families may have fewer opportunities to call upon their extended kin for assistance when the need for child fostering is not urgent. Given that voluntary fostering in southern Africa is more closely related to social mobility and securing better opportunities for children, the possible decline in this practice may have negative consequences for children's educational attainment and future well-being.

But, focusing on the current analysis, what do patterns of child residence tell us about AIDS-related fostering? That there is a historical and current model for fostering out children in sub-Saharan Africa is widely known yet rarely discussed. Our findings have focused on the association between children's non-residence with their parents and instances of family stress, such as divorce, parental illness, or diagnosis with HIV. Although we are not able to examine whether the importance of these factors for child fostering have changed over time, we can extrapolate to how these arrangements may be impacted as HIV-related mortality and illness increase. First, the association between maternal illness, paternal HIV status, and child co-residence indicates a pattern of living arrangements that are sensitive to the anticipation of crisis. If families that suspect themselves to be at risk of imminent death are attempting to secure their children's future well-being while they are still capable of exerting influence over their relatives, their ability to do so may be reduced in communities that are more severely affected by the HIV epidemic because there will be a dearth of unaffected households able to absorb new children. Even before the death of a parent, we find evidence that maternal illness is associated with children living elsewhere. Similarly, when a father knows that he is HIV positive or is unsure of his HIV status, his children are less likely to live with him. This study is observational and cannot address issues of causality; however, we consider it more likely that parental illness—either real or anticipated—influences children's living arrangements rather than the other way around. People in rural Malawi are very familiar with the disease, and where antriretroviral medicines are not widely available or have only recently been introduced, HIV/AIDS is considered to be necessarily fatal. It is possible, though admittedly beyond the scope of this study, that people who anticipate their own deaths make arrangements for children to live elsewhere. Second, the pattern of non-residence with children associated with divorce may also be aggravated in communities with higher HIV prevalence. Over the past decade, the incidence of divorce has increased in Malawi, as it has become more acceptable to divorce a spouse suspected of bringing AIDS into a marriage (Reniers forthcoming). Therefore as divorce and

remarriage become more common, the fostering out of children during these periods of family transition may become more difficult to arrange.

Parental co-residence in rural Malawi is a gendered process but not entirely in the way we predicted. Girls are no more likely than boys to live with their parents. Instead, it is gendered in that maternal co-residence is more common than paternal co-residence. Maternal co-residence, however, is not universal and children are particularly likely to live apart from their mother following a divorce. When parents divorce or separate, children no longer live with both parents and often are fostered out during this turbulent time. Both divorce and remarriage lead to changes in household composition and are associated with children leaving their parental homes. In contrast, it is relatively common for children to live apart from their fathers. This is reduced, however, when fathers have more household wealth. Our findings suggest that economic resources, and particularly ones that can be liquidated such as livestock, increase the likelihood of paternal co-residence.

Finally, it is worth noting that the highest levels of HIV prevalence in Malawi are found in the southern region, which is predominantly populated by ethnic groups that practice matrilineal descent. Systems of lineage provide helpful models for understanding residential patterns. Co-residence differs substantially in patrilineal and matrilineal Malawian communities. One possible explanation is that where land and economic resources are passed down through the father's line, children are particulalry highly valued as social and economic resources for the father and his extended kin. In contrast, in matrilineal societies, men traditionally move to their wife's village and the resources are concentrated around the wife's family. We found that children's patterns of residence mirrored the way resources are distributed in these communities. Children are more likely to live with their fathers where lineage passes through his line. Similarly, where resources are maternally concentrated, children are more likely to live with their mothers. Given that women in Malawi are more likely than men to be infected with HIV (Macro 2004), this may further strain matrilineal kin networks that rely more heavily on maternal co-residence for children's living arrangements.

Thus far in the epidemic, extended kin networks have been remarkable at mitigating many of the social and economic consequences of the disease. The fluidity of households and child fostering in Malawi contribute to this as families foster in orphans or the children of households who can no longer manage. However, the consequences of the disease and the

burdens on housheolds accumulate over time and one might suspect that households cannot continue to absorb as much as they do. Evidence from Zimbabwe where HIV prevalence is among the world's highest and fertility among the lowest in the region (suggesting a transition to a more nuclear rather than extended family structure) indicates that erosion in household viability due to the disease may have already occurred (Gregson et al 2007).

These results have a number of implications for both research and policy. First, the obvious: far too little is known about the reasons for child fostering in a context where HIV prevalence is high. We attempt to tackle this problem here, but more research is needed to really untangle the complex reasons that children do not live with their parents in settings such as rural Malawi and how the fostering context is changing because of HIV/AIDS. We propose here that "crisis-led" fostering is displacing "voluntary" fostering. If this is the case elsewhere in region, estimates of the consequences of HIV/AIDS on communities will be underestimated. More research is necessary to understand what the knock-on effects of these shifts are for educational opportunities and household viability if opportunities for voluntary fostering diminish.

"Crisis-led" fostering will be increasingly important in high prevalence communities as infected individuals fall ill or learn of their infection. The evidence presented here suggests that the ability of households to absorb children who are not their own is more fixed than unlimited. This means that one of the consequences of HIV/AIDS may be to limit household strategies for distributing risk and navigating periods of insecurity. Overstrained African goverments and international agencies increasingly focus attention on the needs of orphans. While this is undoubtedly important, our findings suggest new pockets of vulnerability as opportunities to cope with shocks and improve one's economic position through fostering become more rare.

Table 1. Distribution of orphanhood, children aged 0-14 years, Malawi

Orphanhood status	1992	2000	2004
Total orphanhood (%)	9.9	11.4	13.3
Both parents dead	1.1	1.9	3.0
Paternal orphan only	4.7	6.5	7.8
Maternal orphan only	3.1	3.0	2.6
Both parents alive	91.1	88.6	86.7
N[1]	11,552	29,225	29,137

Source: Malawi Demographic and Health Survey (1992, 2000, 2004)
[1]Cases with indeterminate orphanhood status are omitted from this distribution.

Table 2. Distribution of parental co-residence, children aged 0-14 years, Malawi

Parental Co-residence Status	1992	2000	2004
Lives with neither parent (%)	15.2	17.4	18.5
Lives with mother only	19.8	21.6	20.4
Lives with father only	3.1	2.3	2.1
Lives with both parents	61.9	58.8	59.0
N	11,635	29,475	29,283

Source: Malawi Demographic and Health Survey (1992, 2000, 2004)

Table 3. Distribution of children aged 0-14 years, who do not live with either parent, by orphanhood status, Malawi

Parental Survivorship Status	1992	2000	2004
Both parents dead (%)	6.2	12.0	15.6
Father only dead	9.0	12.0	13.2
Mother only dead	10.3	13.2	10.7
Both parents alive	74.5	62.8	60.6
N	1,769	5,129	5,417

Source: Malawi Demographic and Health Survey 1992, 2000, 2004

Figure 1. Percent of children who coreside with their living mothers and fathers, by child's age.

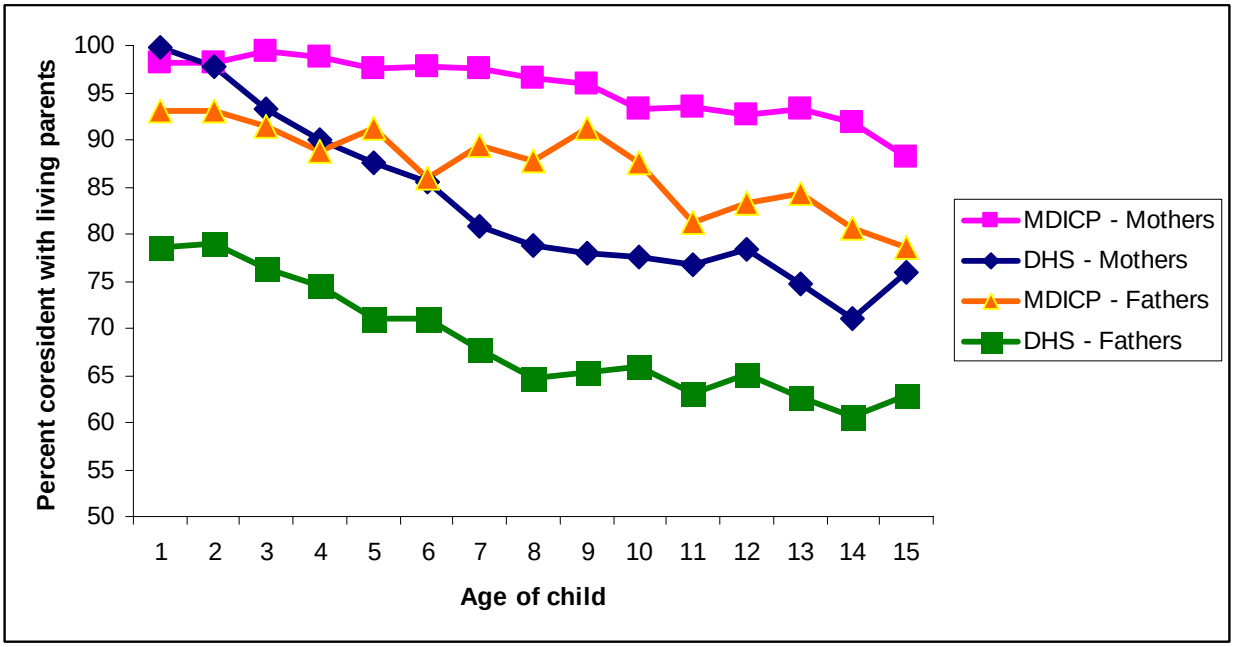

Table 4. Women and men reporting children under age 15, MDICP 2006

	Women	Men
Age (mean years)	33.4	39.5
Children under 15 (mean)	3.4	4.0
	percent	percent
Married	89.6	96.5
Never married	0.8	0.9
Separated	1.7	1.0
Divorced	4.5	0.8
Widowed	3.4	0.9
Polygamous	30.9	15.6
Schooling		
None	30.3	16.8
Primary	62.9	67.0
Secondary	6.8	16.3
House material		
Sun-burnt bricks	24.5	24.5
Fired bricks	42.4	41.9
Mud	32.3	33.1
Other	0.7	0.5
Metal roof	14.0	13.1
Livestock	37.8	42.8
Recently ill	2.8	1.7
2004 HIV result		
Positive	4.8	2.6
Negative	59.0	56.0
Not tested	36.2	41.5
Region		
Mchinji	33.1	34.4
Balaka	35.0	34.4
Rumphi	31.9	31.3
Ethnicity		
Yao	24.7	25.6
Chewa	31.6	33.1
Tumbuka	30.7	31.3
Other	12.1	10.0
2004 Adolescent sample	2.7	3.6
N	1506	1124

Table 5. Child characteristics as reported by parent, MDICP 2006			
	Reported by:		
	Mother	Father	
Age			
<5	35.6	35.3	
5-9	34.6	34.7	
10-14	29.8	29.0	
Male	49.7	50.1	
Female	50.3	49.9	
Parental marital status			
Married to father/mother	68.6		
Remarried	9.5		
Not married	8.1		
Other	13.8		
Ever divorced		33.5	
Reporting parent			
Ill	2.9	1.7	
2004 HIV negative	63.0	60.5	
2004 HIV positive	4.7	2.7	
2004 not tested	32.3	36.9	
Living in household	95.7	87.4	
N	4120	3464	

Table 6. Odds ratios predicting children residing with their living mother MDICP 2006								
Variable	Model 1		Model 2		Model 3		Model 4	
Child's age	0.84	**	0.87	**	0.87	**	0.87	**
Female	0.99		0.96		0.95		0.95	
Socio-economic								
Fired brick house	1.45	+	1.35		1.34		1.34	
Livestock	1.41	+	1.29		1.28		1.29	
Education (ref none)								
Primary school	0.75		0.90		0.97		0.98	
Secondary school	0.47	+	0.92		0.95		0.96	
Ethnicity (ref Chewa)								
Yao	2.18	*	2.39	**	2.41	**	2.36	**
Tumbuka	0.96		0.67		0.66		0.66	
Other	0.93		0.77		0.79		0.78	
Polygamous			1.09		1.11		1.10	
Marital status (ref married to child's father)								
Remarried			0.17	**	0.17	**	0.18	**
Not married			0.29	**	0.30	**	0.31	**
Other			0.94		0.98		0.99	
Mother recently ill					0.35	**	0.36	*
Known HIV status (ref: negative)								
Don't know							0.81	
Know HIV positive							0.89	
r2_p	0.08		0.14		0.15		0.15	
N	3625		3519		3518		3518	
Note: significantly different from comparison category at **p<0.01; *p<0.05; +p<0.10								

Table 7. Odds ratios predicting children residing with their living father, MDICP 2006

Variable	Model 1		Model 2		Model 3		Model 4	
Child's age	0.89	**	0.89	**	** 0.8	**	0.89	**
Female	0.92		0.94		0.95		0.94	
Socio-economic								
Fired brick house	1.10		1.14		1.16		1.14	
Livestock	1.74	**	2.03	**	2.00	**	2.00	**
Education (ref none)								
Primary school	0.73		0.73		0.74		0.74	
Secondary school	0.63		0.61		0.61		0.63	
Ethnicity (ref Chewa)								
Yao	0.62	*	0.68		0.69	+	0.64	*
Tumbuka	1.73	*	1.74	*	1.74	*	1.67	*
Other	1.32		1.27		1.26		1.18	
Polygamous			0.45	**	0.40	**	0.45	**
Ever divorced			0.37	**	0.30	**	0.39	**
Father recently ill					0.48		0.50	
Known HIV status (ref: negative)								
Don't know							0.64	*
Know HIV positive							0.41	*
r2_p	0.05		0.10		0.1		0.11	
N	2945		2935		2932		2932	

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