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Journal of Southern African Studies

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/cjss20>

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Published online: 02 May 2014.

To cite this article: Sangeetha Madhavan, Paul Mee & Mark Collinson (2014) Kinship in Practice: Spatial Distribution of Children's Kin Networks, *Journal of Southern African Studies*, 40:2, 401-418, DOI: [10.1080/03057070.2014.906211](https://doi.org/10.1080/03057070.2014.906211)

To link to this article: <http://dx.doi.org/10.1080/03057070.2014.906211>

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*Kinship in Practice: Spatial Distribution of Children's Kin Networks**

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The examination of co-residential household arrangements has been a mainstay in demographic analysis, based on the assumption that those with whom one lives are the most important influences in one's life. In contrast, we know far less about the spaces not shared but none the less crucially important in the lives of children. In this analysis, we bring together detailed ethnographic data on kin connectivity with geographical information system (GIS) data in a rural area of South Africa, in order to: 1) describe the spatial distribution of kin from a child's perspective, with special attention paid to the role of circular migrants who constitute a critical point of spatial dispersion; 2) examine how type of kinship (maternal vs paternal) and 3) socio-economic status intersect with spatial distribution. Our analysis uses a three-category typology of kin spatial arrangement that reflects employment constraints, patterns of union formation and norms of kin obligation. Specifically, we find that 1) the high-density rural node with extensive dispersion is associated with economic and union stability and access to maternal and paternal kin; whereas 2) the rural node with limited dispersion faces greater economic vulnerability and often operates in the absence of formal unions; and 3) the rural node with minimal dispersion offers the least amount of economic security and is almost always dominated by single mothers reliant on maternal kin.

Introduction

Shared space, as in co-residential household arrangements, has been a mainstay in demographic analysis, based on the assumption that those with whom one lives are the most important influences in one's life. Much effort has gone into creating typologies of

*Sangeetha Madhavan and Paul Mee conceptualised the paper, analysed the data and wrote the manuscript. Mark Collinson provided guidance on various aspects of the paper. We are grateful for comments and suggestions on drafts from Nicholas Townsend. This study would not have been possible without the support of the Agincourt DSS team and the fieldworkers who worked with us in the ethnographic study. Funding for the project came from the National Science Foundation (BCS-0109916).

household structure, such as nuclear, extended, multi-generational or according to headship,¹ and understanding the effects of particular structural forms on well-being.² In contrast, we know far less about the spaces not shared but none the less crucially important in the lives of children. What does the spatial distribution of kin across households, and the connections between households, look like? Our understanding of 'family context' is severely limited; this is partly attributable to data availability, which, more often than not, uses co-residential households as the unit of data collection, but also to assumptions about the primacy of intra-household links. Nowhere is this more pertinent than in sub-Saharan Africa, where linkages to kin living outside the household are as important as, if not more important than, the co-residential context.³ In this analysis, we bring together detailed ethnographic data on kin connectivity with geographical information system (GIS) data focused on a rural community in South Africa, in order to: 1) describe the spatial distribution of kin from a child's perspective, with special attention paid to the role of circular migrants who offer another point of spatial dispersion; 2) examine how type of kinship (maternal vs paternal), and 3) socio-economic status, intersect with spatial distribution.

The importance of this analysis can be appreciated in several ways. First, there is enormous value in visual representation of family networks, as it can reveal patterns and relationships in data that may not be apparent from numerical and textual representations of information. Secondly, despite the substantial literature on labour migration and its effects on family life that exists for South and southern Africa, very little of it has examined the spatial distribution of kin. Thirdly, we know little about the extent to which spatial attributes influence kin involvement in child rearing. For example, does distance play a role in the involvement of close biological kin? To what extent do spatial features mediate the involvement of maternal versus paternal kin? Fourthly, it is equally important to know which kin *do not* appear in kin networks and why.⁴ Low marriage rates and high rates of out-of-wedlock childbearing in black communities complicate the involvement of particular types of kin, and underscore the need to better understand spatial determinants of kin connectivity. Fifthly, this analysis is an important first step in assessing the value of kin for child outcomes, particularly at a time when HIV/AIDS is leading to the premature deaths of parents leaving children in the care of other kin. Even though we do not examine child well-being outcomes in this paper, we present a set of hypotheses about possible effects that can be tested with larger datasets. Finally, this analysis addresses recent calls for expanding data collection beyond residential households, to better understand family processes not just in Africa but in developed contexts, including the US.⁵ One important part of this agenda is spatial analysis. Through in-depth examination of selected cases, we contribute to a growing tendency to analyse social organisation in terms of spatially dispersed social groups.

1 E. van de Walle (ed.), *African Households: Censuses and Surveys* (Armonk, NY, M.E. Sharpe, 2006).

2 A. Gage, E. Sommerfelt, A. Piani, 'Household Structure and Childhood Immunization in Niger and Nigeria', *Demography*, 34, 2 (1997), pp. 295–309; E. Parker, S. Short, 'Grandmother Co-residence, Maternal Orphans and School Enrollment in Sub-Saharan Africa', *Journal of Family Issues*, 30, 6 (2009), pp. 813–36; N. Townsend, S. Madhavan, S. Tollman, M. Garenne, K. Kahn, 'Children's Residence Patterns and Educational Attainment in Rural South Africa, 1997', *Population Studies*, 56, 2 (2001), pp. 215–25.

3 J. Guyer, 'Household and community in African studies', *African Studies Review*, 24, 2/3 (1981), pp. 87–137; S. Madhavan, N. Townsend, A. Garey, 'Absent Breadwinners: Fathers' Connections and Paternal Support in Rural South Africa', *Journal of Southern African Studies*, 34, 3 (2008), pp. 647–63.

4 P. Kreager and E. Schroeder-Butterfill, 'Gaps in the Family Networks of Older People in Three Indonesian Communities', *Journal of Cross-Cultural Gerontology*, 22, 1 (2007), pp. 1–25.

5 S.P. Morgan and executive committee, 'Designing New Models for Explaining Family Change and Variation', Recommendations to the Demographic and Behavioral Sciences Branch of the National Institute of Child Health and Human Development (2008).

What Determines Kin Connectivity?

The crucial role of kin in most aspects of social life in Africa is accepted as axiomatic. Anthropologists have long established the critical role of kin groups in giving identity to children,⁶ and the relatively lower emphasis on conjugal relationships and nuclear families. By extension, children are raised and socialised not just by biological parents, but by a range of adults.⁷ This socially distributive model of child rearing⁸ is a system in which parents and other kin encourage children to be co-operative and interdependent rather than focus on individual achievement. It is also a support network that provides money, counsel, practical assistance and other forms of support to children and families. This is made evident by the high rates of child fosterage found across the continent, particularly in West Africa.⁹ Fosterage occurs out of necessity when parents die or are very sick, as in the case of South and southern Africa with its high HIV/AIDS prevalence.¹⁰ It can also be initiated by biological parents who choose to send children to live with other kin as a way to access better education, provide domestic labour, and become better integrated into larger kin structures.¹¹ Even though spatial factors such as distance or cost of transport are not explicitly highlighted in these studies, it is quite clear that spatial dispersion is a key aspect of child fostering. Having kin who live far away, for example in an urban location, may be seen as an asset to a kin network because they open up better education opportunities for children. The same kin may also serve as sources of new information about health and nutrition that might enhance the well-being of children back in rural areas. However, these kin would not be particularly helpful with day-to-day childcare. Cost of transport and time expenditures for transport would also play an important role.

Who does what for whom has also been a preoccupation in human behaviour ecology, where researchers have approached the relationship between kin networks and children's well-being primarily from an evolutionary perspective. The theory of kin selection states that individuals will preferentially assist relatives who are closely related to them because this will place more of their own gene copies into future generations.¹² This has indeed been commonly used to explain the positive effect of maternal grandmothers on child survival¹³ and also to explain the disadvantages that orphans face in school enrolment compared to non-orphans, in a selected group of African countries.¹⁴ In this case, children biologically

6 P. Riesman, *First Find Your Child a Good Mother: The Construction of Self in Two African Communities* (New Brunswick, NJ, Rutgers University Press, 1992).

7 B.A. Nsamenang, *Human Development in Cultural Context: A Third World Perspective* (New York, Sage, 1992).

8 R. Serpell, *The Significance of Schooling: Life Journeys in an African Society* (Cambridge, Cambridge University Press, 1993).

9 C. Bledsoe, D. Ewbank, U.C. Isiugo-Abanihe, 'The Effect of Child Fostering on Feeding Practices and Access to Health Services in Rural Sierra Leone', *Social Science & Medicine*, 27, 6 (1988), pp. 627–36; U.C. Isiugo-Abanihe, 'Child Fosterage in West Africa', *Population and Development Review*, 11, 1 (1985), pp. 53–73; H. Verhoef, G. Morelli, "'A Child Is a Child": Fostering Experiences in Northwestern Cameroon', *Ethos*, 35 (2007), pp. 33–64.

10 N. Ansell, L. van Blerk, 'Children's Migration as a Household/Family Strategy: Coping with AIDS in Southern Africa', *Journal of Southern African Studies*, 30, 3 (2004), pp. 673–90; S. Madhavan, 'Fosterage Patterns in the Age of AIDS: Continuity and Change', *Social Science and Medicine*, 58, 7 (2004), pp. 1443–54.

11 C. Bledsoe, 'Children Are Like Young Bamboo Trees: Potentiality and Reproduction in Sub-Saharan Africa', in K. Lindahl-Kessling and H. Landberg (eds), *Population, Economic Development, and the Environment* (Oxford University Press, Oxford, 1994), pp. 105–38; E. Goody, *Parenthood and Social Reproduction: Fostering and Occupational Roles in West Africa* (New York, Cambridge University Press, 1982).

12 W.D. Hamilton, 'The Genetic Evolution of Social Behavior', *Journal of Theoretical Biology*, 7, 1 (1964), pp. 1–16.

13 M. Gibson, R. Mace, 'Helpful Grandmothers in Rural Ethiopia: A Study of the Effect of Kin on Child Survival and Growth', *Evolution and Human Behavior*, 26, 6 (2005), pp. 469–82; R. Sear, 'Who Keeps Children Alive? A Review of the Effects of Kin on Child Survival', *Evolution and Human Behavior*, 29, 1 (2007), pp. 1–18.

14 A. Case, C. Paxson, J. Ableidinger, 'Orphans in Africa: Parental Death, Poverty, and School Enrollment', *Demography*, 41, 3 (2003), pp. 483–508.

unrelated or distantly related, particularly to the household head, do not have the same access to resources as biological sons or daughters. However, this theory meets with resistance when interacted with poverty. Where there is severe competition for scarce resources, kin selection may not be as important. Living near closely related kin may be costly to reproductive fitness because kin make too many demands on resources that are critical to child health and well-being. This is what Hadley found in his work in Tanzania, in which interviews with women on their perceptions of the value of living close to kin yielded a clear split.¹⁵ Even though all women recognised the benefits of kin support for children's well-being, wealthier women tended to highlight the onerous demands made on them by poorer relatives.

There is no research that we are aware of that has specifically examined the spatial dimensions of children's kin networks. We can, however, draw on findings and methodologies of recent research on social networks more generally. In their study of kin networks of the elderly in Indonesia, Kreager and Schroeder-Butterfill¹⁶ show that 'gaps' in these networks are a result of childlessness, migration and alienation, a point also made in Cliggett's work in Zambia.¹⁷ Both studies also highlight the interactive effects of socio-economic status and migration on elderly well-being, particularly as it affects the availability of kin to provide various kinds of support. Morris *et al.*'s research in Uganda mapped out HIV transmission routes using data on social networks and visiting patterns, but spatial measures, such as distance, travel costs, time of travel, are not incorporated.¹⁸ Faust *et al.* used GIS and survey data to map out social and economic networks among villages in Thailand, and found strikingly different spatial arrangements across five different types of network.¹⁹ In our analysis, we bring together ethnographic data on kin networks with GIS data on location and distance, the better to understand the spatial dispersion of kin groups and to gauge how space mediates the extent to which kin are engaged with children.

The importance of spatial dimensions can be appreciated by articulating what space stands for. Close proximity to kin is often seen as a benefit because it: 1) facilitates frequent visiting between households; 2) usually means lower transport costs; 3) facilitates greater access to childcare and other practical needs. From a labour market perspective, however, it could mean restricted employment opportunities, owing both to spatial isolation from employment hubs and to a lack of network contacts to access jobs. From an epidemiological point of view, it may be associated with increased disease transmission through dense kin networks.²⁰ Similarly, the location itself of various kin could reflect both positive and negative implications for kin engagement as well as children's well-being. Finally, cultural scripts that define the roles of different types of kin also influence levels of engagement. All these factors are apparent in the South African context we describe below.

15 C. Hadley, 'The Costs and Benefits of Kin: Kin Networks and Children's Health among the Pimbwe of Tanzania', *Human Nature*, 15, 4 (2004), pp. 365–76.

16 Kreager and Schroeder-Butterfill, 'Gaps in the Family Networks'.

17 L. Cliggett, *Grains from Grass: Gender, Aging and Famine in Rural Africa* (Ithaca, Cornell University Press, 2005).

18 M. Morris, M. Handcock, M. Wawer, and R. Gray, 'Using Mobility Networks to Establish Treatment and Control Clusters in a Randomized Community Trial', Paper presented at the Classification Society of North America, Amherst, MA (1996).

19 K. Faust, B. Entwistle, R. Rindfuss, S. Walsh, Y. Sawangdee, 'Spatial Arrangement of Social and Economic Networks among Villages in Nang Rong District, Thailand', *Social Networks*, 21, 4 (1999), pp. 311–37.

20 M. Garenne, P. Aaby, 'Pattern of Exposure and Measles Mortality in Senegal', *Journal of Infectious Diseases*, 161, 6 (1990), pp. 1088–94.

Spatial Dispersion in South Africa

One of the commonest images that we have of South Africa under apartheid is of black men leaving their families behind in the rural areas to work in the mines. The creation of 'Bantustans' – areas of the country populated exclusively by black people – ensured racial separation without losing black labour that was essential for the mining industry. This phenomenon has often been described as one of the most pernicious aspects of the apartheid system. Not only did it cause familial instability but it also restricted movement for the black population through the infamous system of pass laws.²¹ Labour migration to the South African mines drew men not only from the rural areas but also from the neighbouring countries of Botswana, Lesotho and Swaziland. The migrant labour systems separated reproduction and production, and made explicit and visible the usually concealed distinction between the two domestic functions of maintaining and renewing the labour force.²² The end of official or legislative apartheid has offered a new freedom of movement to the black populace.²³ This has happened in two phases. The year 1986 saw the abolition of the pass laws that had dictated where blacks could live and work, and when and where they could travel. In 1994, following the first democratic elections, the traditional 'Bantustan' authorities, who were responsible for restricting movement, were replaced by democratically elected Reconstruction and Development Committees (though the powers of traditional chiefs have been increasingly strengthened over the years).

In referring to the apartheid-era migrant system, Spiegel coined the term 'stretched household' to explain some of the dynamics associated with movement in search of employment. The term indicates that all the members of a stretched household do not share their daily meals or live together, but they are all committed to contribute to the household in one way or another. Because of the strict controls on the movement and residential spaces for the black population under apartheid, 'stretched' referred to a bi-polar extension between a home in a rural village and a place of employment in an urban setting. Present-day conditions necessitate a model of mobility that extends beyond movement between a sending and a receiving community. The post-apartheid context, while offering new freedoms of movement and rights to the black population, continues to be marked by intense mobility in search of employment, education and other goals. It is often preferable, particularly for women, to leave dependents in rural villages, where childcare is not only cheaper but also kept within the family. Therefore domestic fluidity, 'stretched households, and 'dispersed' kin groups remain relevant characterisations of South African domestic organisation. However, fundamental changes in the socio-economic opportunity structure for blacks necessitate a different, and more complicated, approach to family functioning as a process through which individuals and social groups attempt to diversify, and to increase, where possible, their economic, social and cultural capital. Not surprisingly, this has resulted in increasing levels of socio-economic stratification within and between families even in rural areas.

The spatially dispersed social groups that are the focus of this analysis are not simply a result of external conditions such as pass laws, racial segregation, and the creation of labour reserves, though these are powerful constraints. Rather, the economic structure of

21 C. Murray, *Families Divided: The Impact of Migrant Labour in Lesotho* (Cambridge, Cambridge University Press, 1981); A. Spiegel, 'Introduction: Domestic Fluidity in South Africa', *Social Dynamics*, 22, 1 (1996).

22 M. Burawoy, 'The Functions and Reproduction of Migrant Labor: Comparative Material from Southern Africa and the United States', *American Journal of Sociology*, 81, 5 (1976), pp. 1050–87.

23 Even though the dismantling of official apartheid legislation did not begin until the 1980s, urban areas in South Africa experienced an influx of black women as early as the 1970s (L. Bank, 'Matrifocality, Patriarchy and Globalization: Changing Family Forms in a South African City', in A. Gonzalez, L. DeRose, and F. Oloo (eds), *Frontiers of Globalization: Kinship, and Family Structures in Africa* (Trenton, NJ, Africa World Press, 2010), pp. 133–72.

contemporary southern Africa, and existing repertoires of family organisation, form the social and cultural landscape within which people co-ordinate their movement and their residence. Whether the relevant social groups are conceptualised as households, families, networks or kin groups, their members have a multiplicity of potentially and actually conflicting interests that are patterned by age, gender, and relationship. In the situation of spatial mobility and dispersion of local populations typical of South and southern Africa, it is particularly critical that investigations of social connections between children and their kin attend to co-residential features as well as the spatial attributes between households.

Research Site

The Agincourt sub-district, located 500 kilometres north-east of Johannesburg, is located in South Africa's Mpumalanga Province. The Agincourt sub-district is typical of much of southern Africa in three important respects: 1) the land is insufficient to support the population through subsistence agriculture or other local activities; 2) there are very few local employment opportunities; 3) the population has high levels of migration and mobility.²⁴ This rural area was, under apartheid, part of the 'homeland' system that aimed to concentrate the black population in areas with little infrastructure and poor land. The population of about 90,000 lives in 28 villages established through forced resettlement between 1920 and 1970. All villages have water provided through neighbourhood taps, and most have electricity, at least one primary school and a secondary school. The main languages spoken in the area are Shangaan, sePedi and seSotho. Most families have lived in multi-generational, extended family arrangements in which adult siblings live close to one another.²⁵ Households are becoming smaller in size but more complex over time.²⁶ *Stands* occupied by kin are often physically very close to one another; people and food flow constantly between them, and labour, including childcare and supervision, is commonly shared or exchanged. There has, however, been a growth in communities comprising autonomous single-family housing, which has an effect on family relationships.

Employment opportunities within the Agincourt villages are extremely limited for both men and women, and many jobs offer insufficient income. The most common types of formal-sector employment are teaching, nursing, retail, security and, increasingly, tourism. The informal sector includes small-scale commerce of foodstuffs and domestic work. The lack of viable employment in the area pushes people into temporary or permanent labour migration to nearby game reserves or small towns, or to Johannesburg. Labour migrants, particularly female, often leave their children behind in the care of their families and make periodic visits home. Paid childcare is still more of an urban phenomenon in South Africa, as described in classic studies of domestic labour under apartheid²⁷ and in Ally's recent study of black domestic workers.²⁸ While pre-schools exist in some of the villages, they still rank far lower than kin as the choice for childcare if kin are available. The involvement of paternal kin is largely dependent on the status of the parental union. Marriage rates for

24 M.A. Collinson, 'Striving Against Adversity: The Dynamics of Migration, Health and Poverty in Rural South Africa', *Global Health Action*, 3 (2010), p. 5080.

25 H.I. Junod, *The Life of a South African Tribe* (New Hyde Park, NY, University Books, 1962 [1912]); I. Niehaus, *Witchcraft, Power and Politics: Exploring the Occult in the South African Lowveld* (London, Pluto, 2001).

26 M. Wittenberg, M.A. Collinson, 'Household Transitions in Rural South Africa, 1996–2003', *Scandinavian Journal of Public Health*, 35, Suppl. 69 (2007), pp. 130–7.

27 J. Cock, *Maids and Madams: A Study in the Politics of Exploitation* (Johannesburg, Ravan Press, 1980).

28 S. Ally, *From Servants to Workers: South African Domestic Workers and the Democratic State* (Durban, University of Kwazulu Natal Press, 2010).

black women in South Africa have declined drastically since the 1980s, a result of various factors including the increasing economic independence of women, coupled with high unemployment, which has made it difficult for men to pay bridewealth.²⁹ As a result, there has been an increasing separation of marriage from childbearing. Even though formal marriage, marked by a transfer of bridewealth, is the most obvious sign of kin alliance, unmarried women and their families can and do form relationships with the families of the fathers of their children, in order to enhance legitimacy and to secure resources for child rearing.³⁰ Furthermore, maternal and paternal kin often work together to support the efforts of young unmarried fathers.³¹ In cases where fathers and/or their families refuse to assume responsibility for children, women have increasingly sought the help of courts to force ex-partners to pay child maintenance.³²

Data and Methods

Data Description

Since 1992, the site has hosted the Agincourt Health and Demographic Surveillance System (AHDSS), which has been conducting annual censuses to collect demographic data in 25 villages. The baseline census was conducted in 1992, followed by annual visits to each household in the site to update births, deaths, migration and the individual status of every household member, such as residence, union, relationship to household head, and education. Migration has been classified into two categories. A permanent migrant is defined as a person moving into or out of a household with a permanent intention. A temporary migrant, on the other hand, is someone who is identified as a member of the household but has spent six or more months of the previous year out of the household for employment or other reasons. A *de jure* definition of household is employed, which includes temporary migrants as members of the household.³³ This distinction is important in assessing the strength of ties between migrants and their households. Temporary labour migrants are more likely to send remittances and visit more frequently than permanent migrants.³⁴ The geographical locations of each household and important community facilities are also recorded in the DSS.

The ethnographic data for this analysis come from the Children's Well-Being and Social Connections (CWSC) study. Because it is 'nested' in the larger DSS catchment area, the initial sample for the CWSC study was drawn from the AHDSS, a feature usually not found in qualitative studies, and which enables some degree of randomisation. Because the CWSC was designed to investigate, in detail, the wide range of social connections that link members of different residential households and their impact on children's well-being, the initial sample was limited to two villages, one above and one below the median level of access and

29 D. Budlender, N. Chobokoane and S. Simelane, 'Marriage Patterns in South Africa. Methodological and Substantive Issues', *Southern African Journal of Demography*, 9, 1 (2004), pp. 1–26; M. Hunter, 'The Changing Political Economy of Sex in South Africa: The Significance of Unemployment and Inequalities to the Scale of the AIDS Pandemic', *Social Science and Medicine*, 64, 3 (2007), pp. 689–700.

30 S. Madhavan, 'Early Childbearing and Kin Connectivity in Rural South Africa', *International Journal of Sociology of the Family*, 36, 2 (2010), pp. 139–57.

31 S. Madhavan and K. Roy, 'Securing Fathering through Kinwork: A Comparison of Black Fathers and Families in South Africa and the US', *Journal of Family Issues*, 33, 6 (2012), pp. 801–22.

32 G. Khounou, 'Money and Gender Relations in the South African Maintenance System', *South African Review of Sociology*, 43,1 (2012), pp. 4–22.

33 C. Murray, *Families Divided: The Impact of Migrant Labour in Lesotho* (Cambridge, Cambridge University Press, 1981).

34 M.A. Collinson, 'Striving Against Adversity'.

services for the area. We selected two households, at random,³⁵ that had at least one child aged 10 or 11, from each of three wealth strata in each village, resulting in a total of 12 families. We used school-age children as a primary sampling criterion because it allowed us to get a measure of well-being – educational attainment. Within each village, we divided the households with 10- or 11-year-olds into four categories, using two criteria. One criterion was the child's educational attainment, which was used to divide the households into those in which a child is performing at or above expected grade level, and those in which a child is below grade level or not attending school. The other criterion was the economic status of the household as indicated by a series of questions about employment status of the adult members in the 2000 census. This method provided us with starting points in which half of the children were doing well, as measured by their schooling, and half were not, and in which their households vary economically.

Working with eight trained fieldworkers from the area over a period of four months, we mapped out the connections between the initial household and members of other households which had the most important connections. We arrived at these judgements through close and repeated observations of visitation patterns, movements of people and resources, in-depth interviews with members of various households, and fieldworker judgement aiming for groups which, while not closed, had a noticeable drop-off of contact beyond their boundaries. The age and gender structure and wealth status of each household identified was readily available in the AHDSS.

In the course of fieldwork for the CWSC study, we collected a variety of data on social connection, including kinship diagrams, residential histories, interview data and detailed daily observation records. Each instrument was designed to provide a different dimension of social connectivity in different scales of time, ranging from the life course to daily activities. In this analysis we draw on all these data but rely heavily on kinship diagrams developed by the fieldworkers, based on information provided by several members of the family. Basic information included gender, date of birth and relationship, but fieldworkers also collected, where possible, union status, and place of residence, either in the DSS area or elsewhere in South Africa. Extensive training was provided to the fieldworkers in order to ensure standardisation in the way in which information was recorded. Given that kinship has no theoretical limit (i.e. each one of us has an unlimited number of links), the kinship diagrams should be seen as one portion of the kin group heavily dependent on the respondent's perceptions of his/her kin group. In addition, these diagrams also reflect a certain amount of idiosyncratic factors, such as fieldworkers' time and energy availability, respondents' level of knowledge, and selective memory that may leave out certain kin. Every effort was made to cross-check the information provided by various people. We feel confident that the resulting diagrams represent an accurate portrayal of kin groups.

Most census and survey data can offer only a crude picture of inter-household connectivity. In addition to the kinship diagrams, which enable us to determine the 'universe of kin', our ethnographic design allowed us to determine which particular kin and which households are actually engaged in activities that might affect the well-being of the child. By immersing ourselves within these kin networks for an extended period, we were able to observe the nature and intensity of both co-operative and conflictual relationships between individuals and households. From this perspective we are better positioned to differentiate strong from weak ties and identify how the latter might come to resemble the former over time. In addition, by its very design, our project was able to examine dyadic relationships between different sets of households concurrently and also as parts of larger kin networks.

35 We used a random generator program in STATA to select the households and the children in cases where more than one suitable child was found.

Methods

We limit this analysis to data from one of the two initial villages (six kin groups) in order to avoid the confounding effects of village-level characteristics that vary across the two villages. We focus on what anthropologists refer to as the 'kindred', the group made up of a child's parents, siblings, parents' siblings (full and half), spouses and children, and grandparents on both paternal and maternal sides. However, the content of the kindred was provided by the informants, with some prompting by the interviewers. As noted above, respondents' reports are subjective and therefore there is variation in the amount of information on maternal and paternal kin across children. In a few cases, virtually nothing was known about the paternal side. Within this kindred, we identify the subset of functional kindred made up of those households whose members actively engage with the child and his or her household. This is based on observations, discussions and intimate familiarity that the field team developed with the families over the course of the fieldwork. This group also includes temporary labour migrants who reside elsewhere but consider their home to be the household in the village.

We created spatial representations of the functional kindred of each of the source children using the Arc-GIS software. Our starting point is the kinship diagrams described earlier, which were digitised using the Generations genealogical software package. The software allowed metadata – namely village, dwelling/household, location of temporary migrants, town/village if outside the study site – to be linked with each individual. These data were exported from the software and annotated with labels identifying which individuals and households are functionally significant for the focal child's well-being. The latitude and longitude for each place was extracted from the AHDSS database or GIS datasets of South African towns and villages. We also created summary strings representing relationships of all kin (in reference to the child) in a location. We calculate distances from the 'source' household of the child to all other places in the network. Third-party software, ET Geowizards, was used to create lines linking points to source or temporary migrant linked dwellings.

Using Spiegel's concept of 'stretched households' as a starting point, we categorised the maps by three spatial arrangement patterns: 1) high-density rural node with extensive dispersion in key labour market locations; 2) rural node with limited dispersion; and 3) rural node with minimal dispersion. Each map shows: 1) the source child/household; 2) distances to the households of all functional kin; 3) distances to temporary migrants attached to these households; 4) kinship type of each household; 5) the composition of each household represented by a combination of the eight elemental kin relationships.³⁶ Because our knowledge of the exact location of households outside of the field site is limited, we show one data point for all people at these locations rather than the geocodes for each household. Distances were converted to square root of true value to create 'fish-eye' projection, allowing separation of local dwellings and representation of distant places on a single page. For visual clarity, the maps display only functional kin rather than the network of all kindred. However, we provide relevant information on survival of all kin in the text in order to contextualise the visual representation and make valid comparisons. Additionally, the maps include only those kin who have an identified geographic location. This clearly means that the networks are larger than what is shown. However, not knowing a person's location suggests that this person is likely to be disconnected from the rest of the kin group and therefore has negligible influence in a child's life.

The ethnographic vignette accompanying each category describes the ways in which people are linked in a kin network. Each vignette is not meant to be representative of the

36 The eight elemental kin relationships are M for mother, F for father, B for brother, Z for sister, H for husband, W for wife, S for son and D for daughter; for example, FZD refers to father's sister's daughter.

category but rather is chosen because it highlights some of the key dimensions of connectivity, such as resource transfer, co-operation and conflict, and norms dictated by kinship obligation. In order to protect respondents' confidentiality,³⁷ we do not reveal the names of villages within the study site. Villages within the field site are given numbers to ensure anonymity, but we retain the original names of the locations outside the DSS site in order to convey a more realistic picture of the network. All names in the vignettes are pseudonyms.

High-Density Rural Node with Extensive Spatial Dispersion

Unlike Spiegel's model of 'stretched household', which refers to a bi-polar connection between households, our first category reflects greater freedom of movement, a growth of more varied employment opportunities, and a greater number of destination options. It also includes a particular distribution of kin type, which, in turn, is related to union status.

As we see in both maps in [Figure 1](#), children whose parents are in a recognised union usually have access to both paternal and maternal kin both in the immediate vicinity and in more distant locations. However, the rural node is dominated by paternal kin because the normative practice is for women to move to their husbands' villages following marriage. Maternal kin are connected to the child as well and appear along with other paternal kin in the spatial dispersion. Some are close enough to access by a quick, affordable taxi ride. The temporary migrants in both these families reside hundreds of kilometres away but are critically important to the child and the kin group. In Family A, surviving grandparents include paternal grandmother and both maternal grandparents. In Family B, the maternal grandmother was dead at the time of the study. All surviving siblings of both parents (represented in the relationship strings) appear in the functional kin network in Family A, and in Family B we see all of the father's siblings and four out of five of the mother's siblings. To understand the nature of interactions amongst the functional kin better, we turn to a vignette based on the source child in Family A.

When we met him in 2002, Nelson was a healthy 11-year-old boy studying in grade six. Based on his uninterrupted school record, he was a motivated student. He had been encouraged by his older brother and his parents, particularly his mother. His mother had been vigilant in following her children's schooling progress and took the decision to have her eldest son transferred from the government school to a private school because she believed it offered a better education. There is little doubt that Nelson will serve as a role model for his two younger sisters, the youngest one reportedly being favoured by the family. His mother has also been very active in the Zion Christian Church and attended daily services locally, which she believes is crucial to ensuring the well-being of her family. Nelson has enjoyed relative financial stability as his father has maintained a steady job at Siemens in Pretoria. Moreover, his father's boss has provided clothes and financial support for the children's education over the past few years. Even though he has not lived with his son, Nelson's father has maintained a close relationship with his family in the village through frequent phone calls and regular visits. Nelson also enjoys a close relationship with both his paternal and maternal kin. Because his mother moved with his father after their marriage, his closest kin live in three houses belonging to three of his father's brothers, all in the same village only a few streets away. His paternal grandmother lives in one of these houses. Two of his three paternal uncles work away like his father. The third is a local high school principal. In addition, his uncles share ownership of cattle, which currently live in an

37 K. Faust *et al.*, 'Spatial Arrangement'.

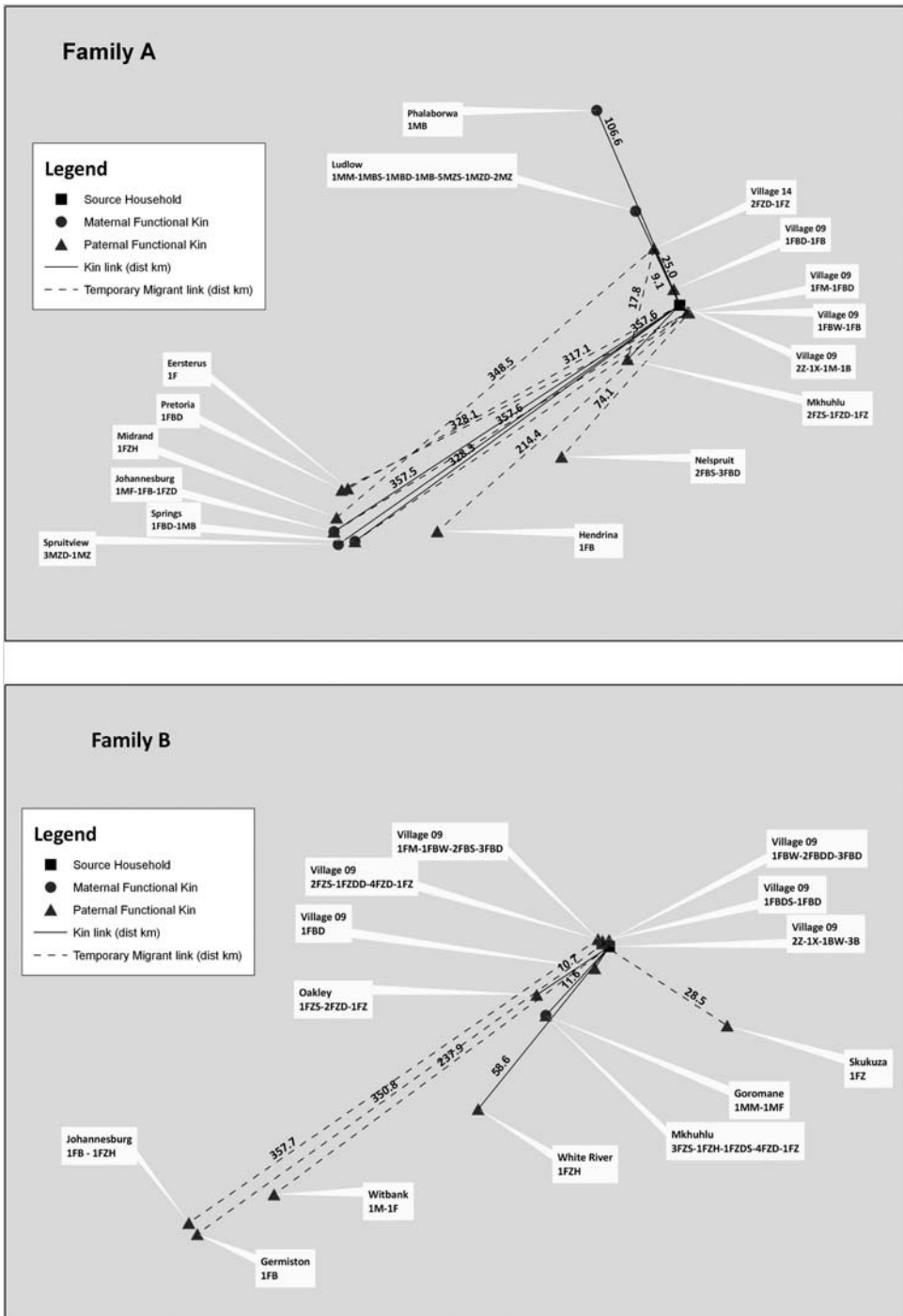


Figure 1. High-density rural node with extensive spatial dispersion.

enclosure close to his grandmother’s house. One paternal aunt lives in a village about six kilometres away with her husband and children. She visits often and is very involved in family decision-making.

Geographical concentration of paternal kin comes with its share of challenges. Despite the frequent traffic between these households, there is a substantial amount of conflict, particularly between the brothers. Our discussions with Nelson's mother and the wives of his father's brothers yielded a list of possible causes, ranging from disputes over cattle to disagreements over church affiliation and the role of alcohol. Nelson's mother also alluded to the favouritism that his grandmother displayed to certain grandchildren. On the other side, Nelson's maternal kin live in his mother's natal village located about 25 kilometres from his home (and outside the boundaries of the DSS). These kin are divided between three households: 1) his maternal grandmother and grandfather share a house with two of their sons and the son's children; 2) his maternal aunt lives with her husband and children; 3) his maternal uncle lives with his wife and children. Nelson's mother has a very close relationship with her parents and all her siblings, particularly her youngest sister, who relies on Nelson's mother for advice. Nelson's older brother lived with his maternal grandparents for one year when his parents were both away. Visits between the two villages are very frequent, though it is Nelson's mother who goes to her natal village more often than receiving her family at her current residence. Financially, the maternal grandparents are relatively stable, and indeed support their unemployed children. However, Nelson's paternal kin enjoy greater financial stability than his maternal kin.

Access to stable, well-paid employment and more traditional forms of wealth underscore the importance of socio-economic stratification in this community. As is made clear in this example, socio-economic status is both a determinant and consequence of kin dispersion. On the one hand, it is clear that it is precisely labour migration by Nelson's father and uncles that has enabled upward mobility in terms of social class. On the other hand, the high value placed on education, along with existing stores of wealth (cattle) abetted the mobility in the first place. But it is also clear from this example that socio-economic stability does not minimise family conflict and in fact may increase it, a point noted by others.³⁸

Rural Node with Limited Dispersion

The second model is an arrangement that is weighted towards the rural node with relatively less spatial dispersion. Unlike the first category, which almost always applies to children living with both parents, the second type of arrangement, shown in [Figure 2](#), can apply to both intact and dissolved unions. We see the prominence of adult siblings of parents in both maps, as we did in [Figure 1](#).

Where parents are cohabiting, as in Family C, there tends to be more paternal kin at the rural node and points of dispersion, but with relatively close access to maternal kin who, in this map, reside within 15 kilometres of the child. For the source child in Family C, both sets of grandparents were alive at the time of the research. All siblings of both parents appear in the functional network with the exception of one of his mother's brothers, who was in jail at the time of the study. When children live with only one parent following a divorce, as in the case of Family D, or with parents who are not in a formal union, there tend to be fewer kin involved and those who are there tend to come from the maternal side. More often than not, the child is in close proximity to maternal kin with varying levels of involvement from paternal kin. In the case shown here, the child's maternal grandfather and paternal grandmother are both dead. All the siblings of the child's mother, with the exception of one brother, appear on this map as involved kin. The father of the child appears as a functional link though most other paternal

38 I. Niehaus 'Witchcraft and the South African Bantustans: Evidence from Bushbuckridge', *South African Historical Journal*, 64, 1 (2012), 141–58.

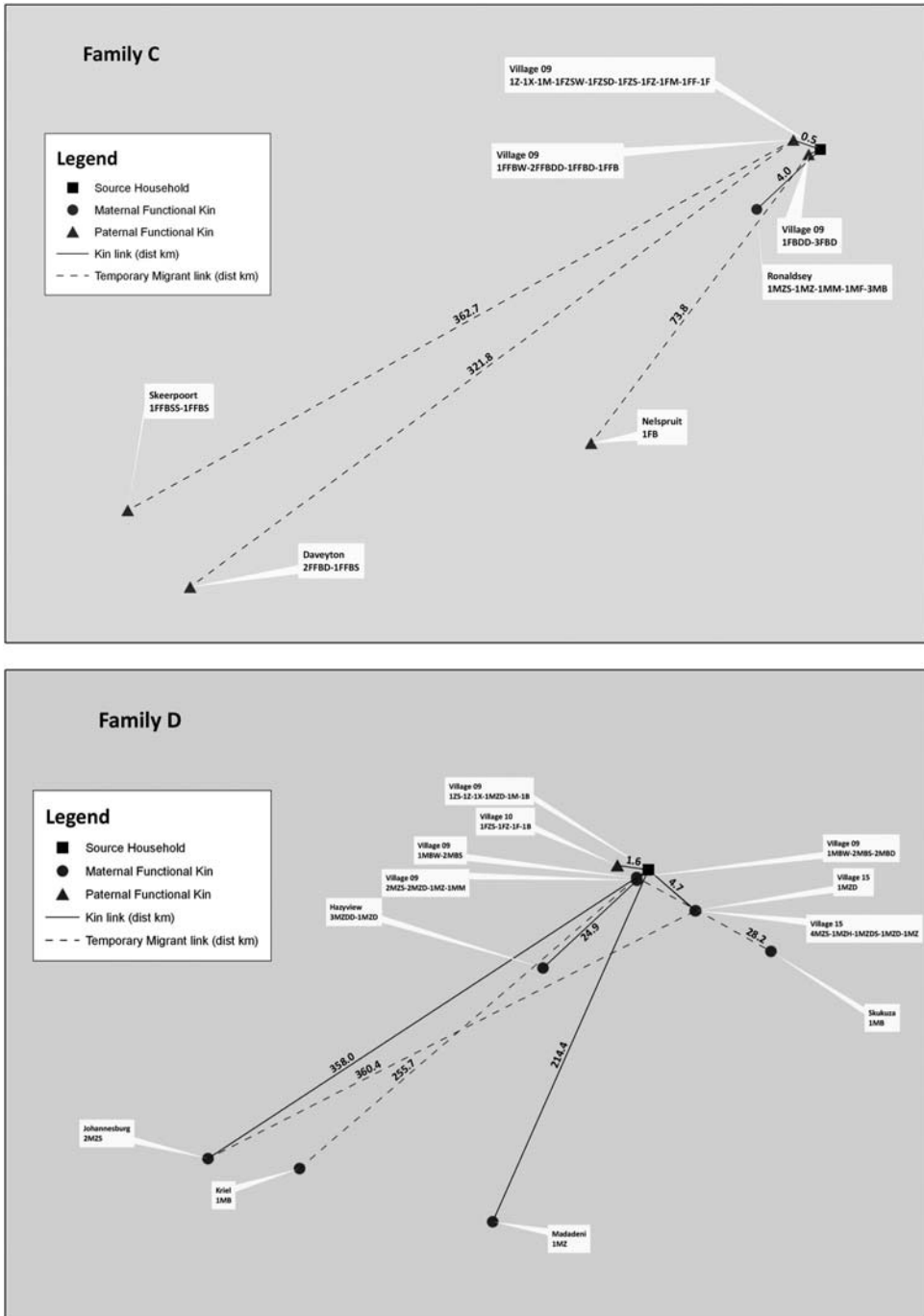


Figure 2. Rural node with limited dispersion.

kin do not. In both maps, we find fewer temporary migrants than in the first category, and they are located quite far away. In both families, however, these migrants are vital to the family's well-being, as shown in the vignette presented on Victoria, the source child in Family D.

Victoria was 10 years old in 2002 and living with her mother, older sister, younger brother and sister's son. She had been living in the neighbouring village when her parents were married, but after the divorce in 1997 she moved back to her mother's natal village. She was in grade five and was doing reasonably well at school, repeating third grade once. She was in good physical health and appeared to be a happy, well-behaved child who helped take care of her two-year-old nephew. Financially, she is not as secure as Nelson, discussed earlier, as her mother has held a series of low-paid temporary jobs in local restaurants and stores. Her father does not have job security either, in his work in the neighbouring game park. She is fortunate, however, to have a solid network of maternal kin connections in the same village. Two of her mother's brothers live a few streets away, each in his own house with wife and children. Her mother's younger sister lives in a neighbouring house with her children and Victoria's grandmother. Both her uncles are migrant labourers who have held down steady jobs over many years. Even though they do not live in the village, each is considered to be a key breadwinner for the entire extended kin group. Indeed they, along with Victoria's mother, support her mother's sister, who is unemployed and has had a series of unstable unions that have left her struggling financially to support her children. Close spatial proximity between all four houses means that there is a constant flow of people, food and other items among them, and care for children and the elderly is available. It also means, however, that some people shoulder a greater amount of financial responsibility than others, which has led to resentment. For example, when the son of Victoria's mother's sister was in jail, it was expected that Victoria's mother and uncles would bail him out.

Even though her parents' divorce came with its share of acrimony, Victoria's mother and father have made a concerted effort at co-parenting. The fact that her father lives in the neighbouring village facilitates this engagement. It also allows Victoria to maintain regular contact with her older brother, who is the only one of the children who continued to live with his father after the divorce. Because her father's sister and nephew live in the same household as her father, Victoria has some contact with her paternal kin, though this does not appear to extend beyond greetings and polite conversation. Even though her paternal grandfather lives in the same village as her father, she does not see him very often, and he does not appear to be very involved in her life.

Rural Node with Minimal Dispersion

The third type that we propose is almost entirely located at the rural node with hardly any spatial dispersion. In both cases we show here, the child's father has died and the entire functioning kin network is composed of maternal kin, particularly the mother's adult siblings.

As the maps show, there is a limited number of kin who can be accessed, and almost all of them are spatially concentrated at the rural node, in this case within a radius of 10 kilometres. There are links to migrants, but in both cases these connections do not yield substantial support. In Family E, the migrant is employed on a farm in Belfast, about 16 kilometres away from his social household in Village 10. In Family F, both sisters are in Johannesburg, one looking for work and the other getting more training. To understand the connections in this family better, we offer a vignette about Vusi, the source child in Family E.

Vusi was 10 years old when we met him in 2002. He was living with his mother, two of his mother's sisters and their children, and his maternal grandmother (his maternal grandfather was dead). His own father passed away in 1994 but, according to Vusi's mother (who was never married to him), he provided no support when he was alive. Vusi does carry his father's surname, but we were unable to get much information on any of his paternal kin, which suggests that they are entirely disconnected from this child. Another of his mother's

sisters lives in a village about six kilometres away with her children (her husband had died). There is frequent traffic and exchange of resources between the two households, intensified over recent months because of the aunt's serious illness. Kin connected through Vusi's maternal grandfather are located in two households in the neighbouring village (less than two kilometres away). Other kin (not shown on the map) are located in Thulamahashe, a growing commercial town about 20 kilometres away. Even though there is constant visitation between these houses, it does not appear that there is much resource exchange beyond the occasional parcel of food. However, the presence of kin in a growing town can be seen as an asset in itself even if neither financial nor material resources are expected from them. They can provide accommodation and possibly connections for employment. Indeed, this may be the main value of such 'weak' ties. Finally, even though Vusi is indirectly connected to a labour migrant in Belfast, he received few resources from this person, probably because this person works as a farm labourer with limited income.

This case, and to a lesser extent that of Victoria, is emblematic of a pattern noted by scholars: that the post-apartheid context has, in one sense, actually increased restrictions on movement, not through legislation, as under apartheid, but because of low socio-economic status, which prevents people from moving.³⁹ Mobility, therefore, is a selective process whereby those with the means, educational or financial, are more likely to move long distances (Type 1), to where employment opportunities are better. A lack of mobility, in turn, conditions the structure and composition of kin network, as can be seen in [Figure 3](#).

Discussion

In this analysis, we present an innovative approach to examining variation in family arrangements in rural South Africa. By bringing together highly detailed ethnographic data on the meaning and practice of social connectivity between family members (from a child's perspective), and GIS data on the location of various households within extended family networks, we propose a three-category typology of spatial dispersion that reflects how black families in one community have responded to the opportunities and constraints present in post-apartheid South Africa. Furthermore, we have paid close attention to the ways in which spatial configuration intersects with kinship type (maternal vs paternal) and parental union status. It has long been noted by anthropologists that, in this community, mothers' brothers are the closest possible relatives that children have.⁴⁰ Our emphasis on kinship is less a reflection of rigid rules than of a set of claims to be negotiated, a framework for personal relationships, and an idiom, all of which are mediated by, and mediate the effect of, spatial attributes. Finally, we examine the circular role of socio-economic status as both a determinant and consequence of kinship networks.

Our analysis is emblematic of three significant trends in South African family life: the mobility of individuals, the interdependence of extended kin, and the importance of links between adult siblings. An adequate conceptual model of black family life in South Africa must take account of these realities. First, movement is almost universal, though subject to restrictions characteristic of the post-apartheid context. While men and women may want to move in search of better employment, as the conventional picture has emphasised, this movement may be constrained by their tenuous socio-economic status, which can increase

39 W. Beinart, 'Beyond "Homelands": Some Ideas about the History of African Rural Areas in South Africa', *South African Historical Journal*, 64, 1 (2012): 5–21.

40 A.R. Radcliffe-Brown, 'The Mother's Brother in Southern Africa', in A.R. Radcliffe-Brown (ed.), *Structure and Function in Primitive Society* (London, Cohen & West Ltd, 1954), pp. 15–31; H.I. Junod, *The Life of a South African Tribe*; I. Niehaus, *Witchcraft, Power and Politics*.

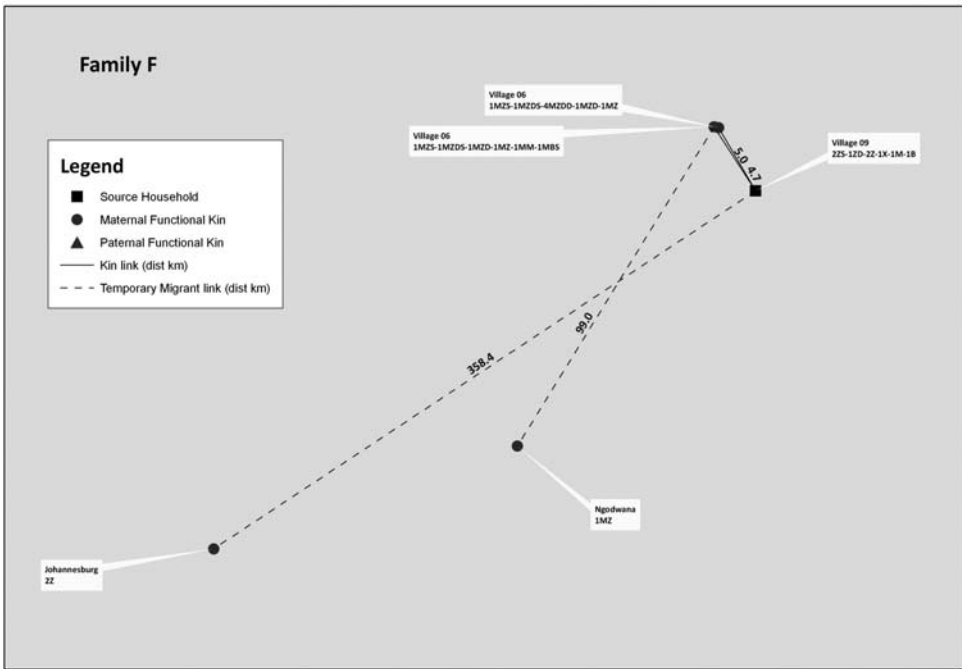
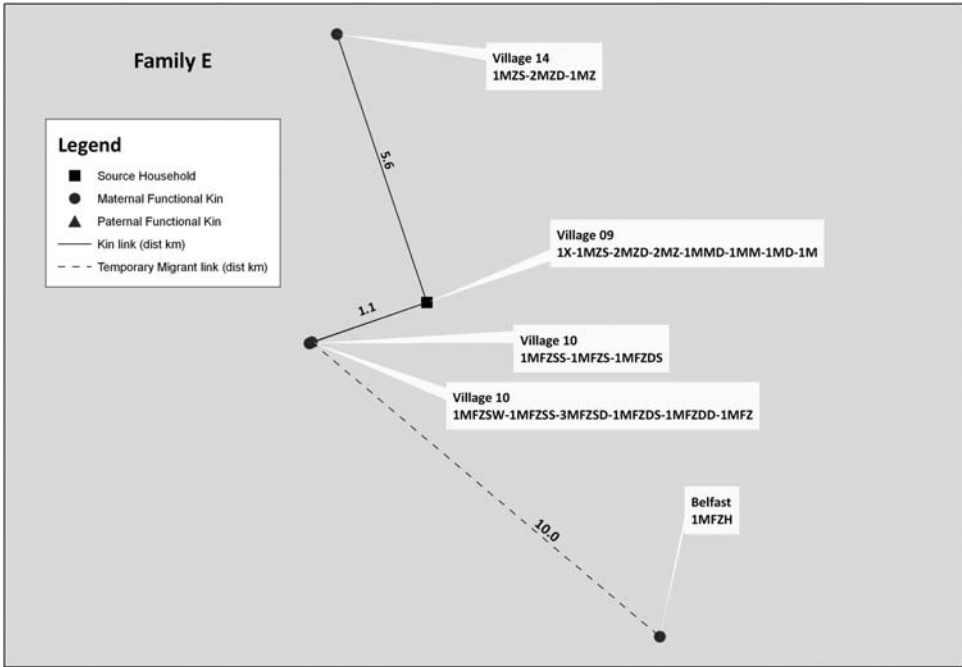


Figure 3. Rural node with minimal dispersion.

the cost of movement. Indeed this is what we see in the third typology, where kin are concentrated at the rural node with minimal dispersion. Moreover, people move because they want get away from family obligations, or to find refuge and support in sickness and death.

Women also move to find work or improve their educational prospects, and rely on close kin, particularly siblings, for help with childcare or schooling. Second, the interconnectedness of family members residing in different households is crucial to the well-being of children. In light of high unemployment and job instability, people rely on kin who live in close proximity, as well as those far away, for support during periods of crisis, or to find new opportunities. A town that is several hundred kilometres away is seen as a place to get a job not necessarily because it has a low unemployment rate, but because someone there has contacts with an employer. Similarly, it is not only the quality of the schools but the availability of someone reliable to care for children that motivates parents to send children away for schooling. The spatial dispersal of kin enables people to have more than one place where they could live, and many of them move between places precisely because they want to maintain several options. Third, the crucial role of adult siblings, particularly on the maternal side, is partly a reflection of the precariousness of conjugal relationships. Union formation and union stability are both difficult to attain, particularly for young women; therefore, one's siblings are more reliable than a partner for the care of children that result from these unions. Siblings often co-reside or are in very close proximity to one another and depend on one another for mutual support. The focus on adult siblings expands the conventional focus on multi-generational family composition, and in particular the role of grandparents, on children's well-being. Given these realities of life in South Africa, the analytic task is not to define what constitutes a household or a family but to understand families and individuals whose lives are characterised by mobility and dispersion. Particularly for people in a situation of great economic insecurity, in which the HIV/AIDS epidemic increases the insecurity of personal relationships, we need to see spatial dispersion and mobility as part of a strategy to make the most of limited resources and opportunities.

Methodologically, this analysis opens up new areas of mixed-methods research for studying family functioning, for several reasons. The spatial dimension of extended family arrangements is rarely discussed in the literature, even for South Africa, where kin dispersion has been institutionalised through decades of labour migration. Therefore, there is enormous value to visualising the geographical locations of particular family members and the distance between them. Maps provide an effective method of conveying variation in access to particular types of kin. Whereas the literature has long established that kin matter, less has been said about how spatial configurations reflect the union status of parents, socio-economic status and the normative obligations that accompany types of kinship. The use of ethnographic data is critical not only to giving meaning to the spatial configuration (i.e. making the maps come alive) but also to strengthening the validity of the typology. In other words, the ethnographic data enable us to develop a theoretically compelling typology, which is essential for examining the effects of particular configurations on specified outcomes for children, which would be of interest to the policy world.

As with any approach, there are problems and weaknesses to consider in the mixed-methods approach we have presented. In this analysis we privileged the ethnographic data by using them to guide the identification of functional kin represented in the maps. As explained earlier, there are selectivity issues to consider in the ethnographic data, which, in turn, may result in a biased or incomplete visualisation of the network. The case of Vusi (Type 2) and his 'weak' kin in Thulamahashe is a good example of this. Conversely, the spatial mapping procedure itself is not free of bias. Perhaps the biggest drawback to the use of spatial mapping is that maps represent only a specific point in time, while people's lives, circumstances and spatial networks are constantly changing. Therefore life-course dynamism in kinship networks, and particularly functional kin networks, is not adequately captured in this analysis. In addition, the maps are limited in their ability to represent the multi-dimensional nature of kin connectivity, which is present in the ethnographic data. In the

interest of clarity for readers, it is necessary to choose how much and what kinds of information to represent on the maps, but future work could certainly consider improvements on this front.

As a next step, we hope to apply the typology to a larger population by using the social connections database that augments the existing AHDSS structure with inter-household linkages. We may also be able to use other datasets in South Africa in order to test the validity of the typology in settings other than the Agincourt field site. Clearly the development of statistical models presents numerous challenges, but we believe that the typology that we have presented in this analysis offers a theoretically compelling rationale for choosing appropriate indicators and for specifying the pathways of effects. We believe the effort will yield valuable insights into family functioning and guide the development of more effective interventions to promote families' and children's well-being in South Africa and elsewhere.

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