A genealogical analysis of Children's family network dynamics in a rural sub-saharan population

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Research question

It is almost a truism to say that the family environment in sub-Saharan Africa is complex. The contours of membership groups – residential, economic, lineage – are variable; relationships between spouses and family members take a wide range of forms (polygamy, large age differences between spouses, intergenerational co-residence, classificatory system of kinship) and mobility is high, starting in childhood. In short, individuals, especially children, are bound up in dense and shifting family networks. Usually, demographic research focuses on the relation between parents and children observed at a specific period of time. This approach presents some limits: it takes into account only a small part of children's family network and it underestimates family arrangement dynamics. Due to quantitative longitudinal data collected for a period of 25 years in Malian rural areas which also include a genealogical database, we are not only able of describing in detail the children's family environment but also its continuing transformation as the child gets older. Two main results stand out. In one hand Children's family network is not static: children are growing up in family and relational configurations which are continuously transformed. In a second hand, stability of the members of the children environment greatly depends of the type of genealogical link. We found that the more closer are individuals with the child (biological parents, brotherhood..), the more they are likely to stay around the child for a long time. Generally ignored, the flexibility and the instability of the relational environment appear as a major component of the individual experience and of the children's socialization context. Yet, the closest family members of the children stay quiet stable around him.

Context

Our study is based on a small-scale longitudinal survey conducted in rural Mali over a period of 25 years. This SLAM (Suivi longitudinal au Mali – Longitudinal Survey in Mali) project was implemented to track demographic and family changes in a rural Sudano-Sahelian area.

The study population (7 villages, 4300 inhab. in 2009) is in the Bwa ethnic region of Southeast Mali, about 450 kilometers from Bamako, and near Burkina Faso. Socio-economic and demographic characteristics are those commonly shared by Sahelian farmers. The population lives of family-based agricultural production, mainly food crops. The fertility transition has not begun yet (8 children per women), child mortality decreased rapidly during the last decades but is still high (140 deaths per 1000 before the age of 5). The natural growth rate (about 3% per year) is partly offset by migration, mainly internal or to neighboring countries. Schooling, hitherto marginal, developed with the advent of democracy and decentralization in the 1990s, with around half of all children in the study area attending school at the end of the 2000s. Other social changes since the 1990s include the generalization of temporary labour migration for adolescent girls and boys and the weakening of traditional marriage patterns (rise in age at marriage and in informal unions).

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Like most populations in the region, the Bwa have a patrilineal organization with residency and filiation rules structured around the men. Women move to their husband's home when they get married, they move to another village when they divorce and remarry. Divorce is common (about 30% of first unions) as well as polygamy (about one fifth of the married men and one third of the married women). Marriage is not associated with access to economic autonomy; the couple joins the domestic group of the husband which often includes several conjugal units. Children belong to the lineage of their father; if weaned they will not follow their mother in case of divorce. However, it is not unusual for them to spend part of their childhood with other relatives than their biological parents, including their mother's relatives. More generally, accommodating relatives, in-laws or even individuals with distant relationships, for short or longer periods of time, is common in this population, as it is observed widely in Western Africa. Finally, these different features in terms of mobility, family affiliation and responsibilities produce family structures with a high level of diversity and complexity. Most of the people belong to large domestic groups; they spend their everyday life with various people, with extended relationships. For instance, 60% belong to domestic groups with at least 10 residents, 50% belong to polynuclear families, and only 17% belong to a domestic group limited to a nuclear family (husband, wife/ves, and their children).

Data

The SLAM observation system was set up in 1987-89, with a new round every 5 years, the last update in 2009-10. It combines various operations (census, panel survey, life-event survey, genealogy, etc.).

This paper is based mainly on data from a follow-up survey (« Enquête renouvelée »), conducted exhaustively (both sexes, all ages) in 7 villages (4300 inhabitants). This panel survey includes a new local census each five years, which is merged with the previous ones, and completed with information recorded through interviews in each family. The objective is to follow every individual recorded by (at least) one census in order to know his status and place of residence at every other census. Thanks to collaboration with the Malian institute of statistics, data from the national censuses were also incorporated in the database. The current version of the database includes 9 censuses over the 1976-2009 period: 5 local censuses (1988, 1994, 1999, 2004, 2009) and 4 national censuses (1976, 1988, 1998, 2009). The follow-up was done for 9,200 individuals who were registered as resident at least at one census (about 30,000 census/person). The survey was designed not only to follow individuals but also for tracking family units across censuses. In addition genealogical information was recorded to draw relationships between individuals belonging to the same domestic group at one census.

These longitudinal data provide a unique opportunity to describe precisely the family environment of each individual at each census, and to track the changes in this family environment across censuses. Indeed this means not only knowing and comparing the morphology of the domestic group between censuses; it means also that we are able to know who are, for the index person, the people who left the domestic group and those who joined it from one date to the other in regards with their genealogical relationship with the index person. For instance, the changes in one child's environment could be documented by knowing that his mother and his maternal siblings left the family unit from one census to the other, while his father got a new wife and that an uncle, coming back from migration, joined the family.

The challenge in this paper is precisely to address the issue of the dynamics of children's family environment, taking into account the personal relationships in presence and their changes over time.

To address the issue, the data from the follow-up survey will be combined with the data from the genealogical basis. Due to recent developments, the anthropological software *Puck* (Program for the Use and Computation of Kinship data, http://www.kintip.net/), makes it possible to define the kinship relations between the child and each of the other persons from his domestic group. Comparing the family network at two following censuses for children recorded at both dates, will therefore provide the opportunity to approach and document the flexibility and (in)stability of children's family environment.

The approach will be adopted, with a focus on intercensal periods of approx. 5 years (1988-94, 1994-99, 1999-2004, 2004-09), following children aged 0-6 at the first census (5-11 at the second census).

Provisional plan and expected results

As a rule, all analyses will be done from the children's point of view. The child is the unit of analysis, the reference for all indicators. The family unit is the domestic group (the economic family unit), named *zû*.

The paper is structured around three main perspectives.

1. The family environment of children.

This first section proposes a descriptive approach of children's family structures. It is based on a classical cross-sectional approach, using census data (1976-2009, N=9379 children aged 0-11).

Indicators :
- Indicators of family morphology : size of domestic group, mono/polynuclear structure, number of generations in presence ;
- Differences according age and sex of the child ;
- Long term trends 1988-2009

Main results :
- The general situation for a child : large and complex family structure; contact with an extremely large range of relatives; biological parents are only part of the range of adults in charge of the children;
- No main difference between sexes
- No main change over time.

2. The dynamics of the family environment of children.

This second section is focused on the intercensal transitions (t, t+5) of family units.

Indicators :
- Proportion of children who live in domestic groups with main changes (size, structure…) between censuses
- Family recomposition : part of individuals who leave the domestic group by reason (death, emigration, family segmentation) and characteristics; part of individuals who join the domestic group by reason (birth, immigration, inter-family mobility); balance in the number and characteristics between out- and in- members of the domestic group.

Main results :

- The family environment (domestic group) of a child present changes, in size and structure, from one census to the other, for a large part of children. For instance one third of children belonging to a polynuclear unit at t are in a mononuclear unit 5 years later, while one fourth of those in a mononuclear unit live in a polynuclear one 5 year later;
- However, the change in terms of individual composition of this environment is much more impressive. The average number of people in a child's domestic group is about the same at t and t+5 (around 14), but over 40% are different.
- There is an important turn-over in the children's family environment.

3. Kinship ties in children's network

This third section examines the kinship ties between the child and the members of his domestic group (father, mother, siblings, uncles, aunts, grand-parents, cousins…). The objective is to document who is present in the child's network, and who *stays* in this network over time. In other words, the relationship is described by the kinship ties and qualified (or weighted) by the time spent together in the domestic group.

Indicators :
a) *Who is part of the child's environment? (cross-sectional data)*
   -- % of detailed kinship ties in the child's family network
   -- probability to have various kinds of relatives in the domestic group
b) *What are the kinship ties which are the more stable? the more instable? (longitudinal data)*
   -- proxy for stability (*instability*): the individual is member of the domestic group of the child at census t and (or) at census t+5
   -- % of kinship ties which are the more stable/instable
   -- % of stability/instability among different categories of relatives

Main results :
o Presence and stability of biological parents is high.
o The father's relatives (agnatics) are dominant in numbers, but mother's relatives are present for a significant number of children
o The nuclear component represents less than a half of a child's network but is quiet stable over time
o Main features of a child family network are: diversity, flexibility and instability.
o Qualitative information recorded in individual interviews (N=60) about the "persons who meant the most in one's childhood" will be used to put into perspective the statistical results concerning the more stable relatives in a child's network.

Final discussion

The discussion will focus on the meanings of the flexibility and variability over time of children's family network. What does it mean in terms of socialization? What are the norms and models of families which are passed down from one generation to the other? What are the lessons on the limits of personal, selected, relationships and more widely on the building of private and elective relationships?