Coll. Antropol. **30** (2006) 3: 475–478
Original scientific paper

An Example of Demographic Anthropology, the Study of Matrimonial Exchanges – Endogamy, Choice of Spouse and Preferential Marriage

Marie-Hélène Cazes

National Institute of Demographic Studies, Paris, France

A B S T R A C T

The development of demographic studies in anthropology is directly linked to the success of population genetics. The anthropodemographic or anthropogenetic approach is thus underpinned by questions of genetics. While demographers focus on population dynamics and renewal in quantitative terms, population geneticists refer not to individuals but to the sets of genes carried by individuals in a population. Their aim is to detect the factors and processes which influence the genetic evolution of a group, i.e. which modify gene frequencies from one generation to the next. Among them are the factors which affect modes of reproduction. To illustrate the association of these three approaches, i.e. demographic, anthropological and genetic, I use here the example of matrimonial exchanges – which lie at the heart of the population renewal process – among the Dogon of Boni, a Malian ethnic group living in the southern Sahel. We can see how successive analyses – starting with endogamy at macroscopic level and moving down to the individual with choice of spouse and preferential marriage – combining both quantitative and qualitative approaches, can be used to obtain a detailed description of matrimonial exchanges which shed light upon and complement the three different viewpoints.

Key words : *demographic anthropology, genetic anthropology, matrimonial exchanges, endogamy, preferential marriages, Dogon of Roni, Mali*

Introduction

The development of demographic studies in anthropology is directly linked to the success of population genetics (sometimes qualified as »qualitative demography«, notably when it concerns the study of hereditary diseases). The anthropodemographic or anthropogenetic approach is thus underpinned by questions of genetics. While demographers focus on population dynamics and renewal in quantitative terms, population geneticists refer not to individuals but to the sets of genes carried by individuals in a population. Their aim is to detect the factors and processes which influence the genetic evolution of a group, i.e. which modify gene frequencies from one generation to the next. Alongside population size and migrations, these are the factors which affect modes of reproduction. Hence, for example, endogamy, family size distribution, choice of spouse, the existence or otherwise of preferential marriages, formation of marriage cycles, etc. are important parameters to be taken into account. And the concepts of anthropology are often borrowed for the study of these practices.

To illustrate the association of these three approaches, i.e. demographic, anthropological and genetic, I will use the example of matrimonial exchanges – which lie at the heart of the population renewal process – among the Dogon of Boni, a Malian ethnic group living in the southern Sahel. The topography of their territory is highly specific, comprising a series of raised massifs around 15 km apart that emerge above the plain. The Dogon population totalled around 5,000 at the time of the study, distributed between 4 massifs, each comprising 3 to 4 villages.

Matrimonial Exchanges among the Dogon

Endogamy

Various levels of analysis are possible. *Exogamy* (or its opposite *endogamy*) are located at the macroscopic level and call for a quantitative approach. Endogamy may exist in varying degrees, at the scale of the ethnic group or

Received for publication June 11, 2006

on a finer, intra-ethnic scale. Among the Dogon of Boni for example, strong ethnic endogamy is observed[1] : 96% of marriages take place between Dogon, and only 4% with a different ethnic group. If the analysis is pursued within the ethnic group, by cross-tabulating the origins of spouses by their village of birth, we obtain a table in which the majority of marriages are on the diagonal. We observe that 84% of marriages take place within the same massif, and only 16% between massifs (Table 1).

It is interesting to look for an explanation for this massif endogamy, using log-linear models for example, which can be used to test, from a statistical viewpoint, the pertinence of certain criteria[2].

Among the Dogon, these endogamy criteria are variable[3]. When the village is large enough (as is the case for Tabi, a village of 1,200 inhabitants), significant lineage endogamy is observed. On the Sarnyéré massif, where customs are strongly adhered to, spouses are sought either in the same lineage or, failing that, in the same village. On the two other massifs, Ella and Loro, where the villages are smaller and much further apart, the criteria of geographical distance alone is sufficient to explain the exchanges.

This type of macroscopic analysis, though specific to demography, also seeks to interpret the phenomena observed. It highlights the importance of factors such as population size, geographical location or the weight of tradition in the practice of endogamy. The demographic and genetic consequences of this endogamy are important, since it divides the population into »islands«, thus implying that the population may be biologically heterogeneous.

Choice of Spouse

Beyond endogamy, there is a second level of analysis involving the study of preferential marriage. This is a much finer »microscopic« level. Do matrimonial customs recommend the choice of spouse based on a criterion of kinship?

Since most Dogon marriages take place within the massifs, the second analysis level focuses on a local level[4]. Within the massif, do people marry by chance (i.e. with no constraints other than those linked to age difference between spouses or to the existence of durable unions in the population)? Or does preferential marriage exist?

TABLE 1
DISTRIBUTION OF MARRIAGES CONCLUDED SINCE THE FOUNDATION OF THE GROUP BY SPOUSES' VILLAGE OF BIRTH

Wife 's village	Husband's village														
	Sarnyéré massif				Tabi massif			Ella massif				Loro massif			
	Nem	Dja	Tan	Koyo	Tabi	Tup	Téga	E.Bu	E.Bo	Mom	Ban	Loro	Yuna	K.Bo	Prin
Nemgéné	349	72	67	72	12	2	1	5	0	1	0	0	0	0	1
Djamaga	60	124	60	40	0	0	0	0	2	1	0	0	0	1	0
Tandi	54	56	98	29	1	0	1	2	1	0	0	0	0	0	0
Koyo	41	26	20	34	0	0	0	0	0	0	0	0	0	0	0
Total Sarnyéré	504	278	245	175	13	2	2	7	3	2	0	0	0	1	1
Tabi	10	0	2	1	746	39	60	1	1	0	0	0	1	0	10
Tupéré	0	1	2	0	31	164	19	0	0	0	0	2	1	3	5
Téga	0	0	6	0	49	35	276	0	0	0	0	4	1	3	1
Total Tabi	10	1	10	1	826	238	355	1	1	0	0	6	3	6	16
Ella-Buli	1	2	4	0	0	0	0	10	6	6	0	0	0	1	1
Ella-Boni	2	0	0	0	3	1	1	6	20	13	10	0	0	4	1
Momni	2	1	1	0	1	0	0	8	11	22	10	5	0	4	0
Banaga	0	0	0	0	0	1	0	3	10	11	20	3	0	4	1
Total Ella	5	3	5	0	4	2	1	27	47	52	40	8	0	13	3
Loro	0	0	0	0	0	0	1	1	7	3	5	85	9	39	1
Yuna	0	0	0	0	1	2	3	0	0	1	0	15	7	10	5
Koyo-Boni	0	0	0	1	0	0	0	2	2	3	1	26	2	35	0
Pringa	0	0	0	0	11	5	2	0	2	0	0	1	4	0	88
Total Loro	0	0	0	1	12	7	6	3	11	7	6	127	22	84	94
All massifs	519	282	260	177	855	249	364	38	62	61	46	141	25	104	114
Non dogon vill.	0	0	0	0	0	0	0	0	2	2	5	3	0	0	0
Unknown vill.	60	36	22	17	57	19	26	9	24	17	24	41	4	9	42
TOTAL	579	318	282	194	912	268	390	47	88	80	75	185	29	113	156

TABLE 2
DISTRIBUTION OF MARRIAGES BETWEEN COUSINS OR OTHERWISE AMONG THE DOGON OF BONI

Marriage type	Marriages between first cousins					Other marriages			TOTAL
	MoBrDa	FaSiDa	MoSiDa	FaBrDa	Total	Unkn. A	N. C.	Total	
First marriages	57	25	9	36	127	264	259	523	650
Next marriages	31	15	17	31	94	352	329	681	775
All marriages	88	40	26	67	221	616	588	1,204	1,425

MoBrDa – mother's brother's daughter (matrilateral cross-cousin), FaSiDa – father's sister's daughter (patrilateral cross-cousin), MoSiDa – mother's sister's daughter (matrilateral parallel cousin), FaBrDa – father's brother's daughter (patrilateral parallel cousin), Unkn.A – unknown ancestry, N. C. – non cousin spouses

This question is an anthropological one, though geneticists are also highly interested in the answers obtained. For them, the most important point is to know whether preferential marriage rules are actually applied or whether they are no more than »theoretical«. If preferential marriage is indeed widely practiced, this will affect the genetic structure of the group.

Analysis of this kind brings in anthropological concepts, taking into account the population's kinship terminology (Iroquois among the Dogon) but also, in many cases, its history. Traditionally among the Dogon, preferential marriage was with the matrilateral cross-cousin (mother's brother's daughter, MoBrDa), and this tied in with the traditional system of inheritance whereby Ego inherited from his maternal uncle. But over the last century, the introduction of Islam has transformed the customary system. In certain villages, the preferential spouse has become the patrilineal cross-cousin (FaSiDa).

From a methodological viewpoint, the possibility of obtaining the *family trees of the population* over several generations is a considerable advantage. A database of this kind makes it possible to compare the types of marriage actually concluded with the rules laid down by custom.

Thus calculations drawn from Dogon family trees show that, for a young man who wishes to marry, only an average of 6% of young women of the right age are cousins. Yet Table 2 shows that 19.5% of marriages are between first cousins for first marriages, though this proportion falls to 15.5% for all marriages.

If the four types of marriage between cousins are ranked in order of decreasing proportion among first marriages, the following result is obtained:

45% MoBrDa 28% FaBrDa 20% FaSiDa 7% MoSiDa

The most frequent marriage is indeed that recommended by traditional custom (MoBrDa) and not the type of marriage newly »officialized« over the last century (FaSiDa) which arrives in third position. The type of marriage classically recommended by Islam (FaBrDa) ranks in second position only.

So these observations contradict the declarations relating to the »new« preferential marriage. For geneticists, the key question is to know whether the observed distribution of marriages differs from that which would be obtained in the case of random marriage distribution. This is why researchers always seek to compare actual observations with what one would expect to observe in the case of random unions.

Moreover, we know that the mean age difference between spouses is in itself a structural constraint which may be decisive in the choice of spouse. Among the Dogon, wives are, on average, 6 years younger than their husbands. In a pioneering article in 1963, Hajnal showed that certain marriages between cousins reproduced the traditional age differences between spouses more easily than others (Figure 1).

Here again, genealogical data, taking account of individuals' age, were used to calculate the theoretical percentages of marriage with each type of cousin in the Tabi village, *taking account of the age difference between spouses* (Table 3, 1st line).

They can be compared with the proportions observed in the population (Table 3, 2nd line). We observe a very high proportion of marriages with the matrilateral cross--cousin (MoBrDa) compared with the expected average and strong avoidance of the matrilateral parallel cousin (MoSiDa), probably linked to the incest taboo.

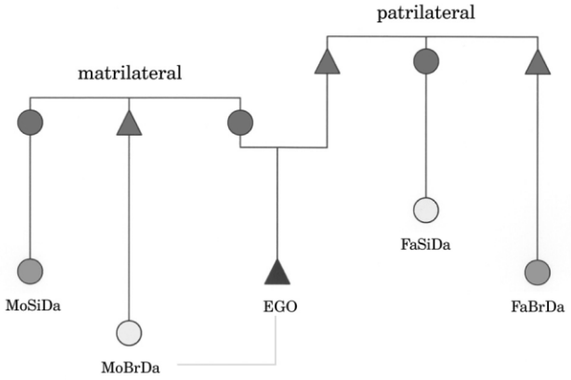

Fig. 1. The different types of Ego's cousins. The age difference observed between Ego's mother and father is observed again between Ego and his matrilateral cross-cousin only. MoBrDa – mother's brother's daughter (matrilateral cross-cousin), FaSiDa – father's sister's daughter (patrilateral cross-cousin), MoSiDa – mother's sister's daughter (matrilateral parallel cousin), FaBrDa – father's brother's daughter (patrilateral parallel cousin).

TABLE 3
COMPARISON BETWEEN EXPECTED AVERAGE PROPORTIONS UNDER THE ASSUMPTION OF RANDOM UNIONS, TAKING ACCOUNT OF AGE DIFFERENCE BETWEEN SPOUSES, AND OBSERVED PROPORTIONS

Marriages with	Cross-cousins		Parallel cousins		Total
	MoBrDa	FaSiDa	MoSiDa	FaBrDa	
Average proportions expected under the assumption of random unions	0.32	0.18	0.27	0.23	1
Proportions observed	0.49	0.23	0.03	0.25	1

MoBrDa – mother's brother's daughter (matrilateral cross-cousin), FaSiDa – father's sister's daughter (patrilateral cross-cousin), MoSiDa – mother's sister's daughter (matrilateral parallel cousin), FaBrDa – father's brother's daughter (patrilateral parallel cousin)

Hence, family trees can be used to control for the divergence between »words« and »deeds«. Among the Dogon, the most frequently observed form of marriage is with the matrilateral cross-cousin. And, given the age difference between spouses, this is the only cousin who structurally reproduces the right customary age difference. It is also the spouse who was recommended by traditional custom before the arrival of Islam. So Islamization in the early 20th century has not modified matrimonial practices, despite what the Dogon say.

Conclusion

We can see how successive analyses, starting at macroscopic level and moving down to the individual, combining both quantitative and qualitative approaches, can be used to obtain a detailed description of matrimonial exchanges which shed light upon and complement the three different viewpoints: demographic, but also and above all, anthropological and genetic. They simultaneously highlight the complexity of these exchanges, which are always very difficult to interpret.

REFERENCES

1. CAZES, M. H., E. BROWN, B. FLOURY, A. JACQUARD, C. SAUVAIN-DUGERDIL: Les Dogon de Boni, approche démo-génétique d'un isolat du Mali, Cahier Travaux et Documents n°132. (Ined-PUF, Paris, 1993). — 2. BISHOP, Y. M. M., S. E. FIENBERG, P. W. HOLLAND: Discrete Multivariate Analysis: Theory and Practice. (MIT Press, Cambridge MA, 1975). — 3. CAZES, M. H., J. Biosoc. Sci., 22 (1990) 85. — 4. CAZES, M. H., Soc. Biol., 28 (1981) 281.

M. H. Cazes

Institut National d'Etudes Démographiques, 133 boulevard Davout, 75980 Paris cedex 20, France
e-mail: cazes@ined.fr

PRIMJER DEMOGRAFSKE ANTROPOLOGIJE, ISTRAŽIVANJE ODABIRA BRAČNOG DRUGA – ENDOGAMIJA I ODABIR SUPRUŽNIKA

SAŽETAK

Razvoj demografskih istraživanja u antropologiji izravno je povezan s uspjehom populacijske genetike. Tako su antropodemografski ili antropogenetički pristup poduprti pitanjima iz genetike. Dok su demografi usmjereni na dinamiku populacije i reprodukciju u kvantitativnim određenjima, populacijski genetičari ne okreću se pojedincima, već skupu gena čiji su nosioci pojedinci u populaciji. Njihov cilj je otkriti faktore i procese koji utječu na genetičku evoluciju grupe, tj. one koji modificiraju frekvencije gena od jedne do druge generacije. Među njima su faktori koji utječu na reprodukciju. Kako bi se prikazala povezanost ova tri pristupa, tj. demografskog, antropološkog i genetičkog, bit će korišten primjer odabira bračnog druga – koji predstavlja središte procesa produženja populacije– između Dogona iz Bonija, malijske etničke skupine koja živi u južnom Sahelu. Možemo vidjeti kako uzastopne analize koje kombiniraju kvantitativne i kvalitativne pristupe i to počevši od endogamije na makroskopskoj razini do odabira supružnika te poželjnog braka na individualnoj razini mogu biti korištene za postizanje preciznijeg opisa bračnih izmjena, što dodatno rasvjetljava i upotpunjuje tri pristupa problemu.