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Matrimonial patterns and trans-ethnic entities

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Despite the complexity of their object of study, i.e. human society and culture, anthropologists seldom address complexity per se. In this paper I would like to briefly suggest approaches to deal with certain complex issues involved in the modelisation of social relations within a naturalistic paradigm. What I want to show primarily is how anthropological knowledge might be markedly enhanced by truly confronting the complexity of anthropological phenomena, i.e. by putting culture and social structures back into the natural/physical world, to understand how “it really works”. And the condition for performing such an enterprise is close cooperation with other disciplines dealing with the study of complexity. The topic at hand is modelling the origin of a system of surname equivalences in tribal India. But the work being done might have a much broader range, by helping the studies of matrimonial systems to adopt more naturalistic approaches.

Georg Simmel wrote about "large systems", formed of "immediate interactions that occur among men constantly...that have become crystalized...attaining their own laws" (Simmel 1950, 10). The present study aims at understanding how one of these systems evolves "by itself", beside or in conjunction with what the actors say and think about it.

Among several tribal societies of North-East India people recognize that some of their neighbours, belonging to altogether different cultures and ethnicities, and speaking different languages, are actually “similar” because of their surname. “Similar” people are identified by their surnames being “the same”. We might translate without too much risk “similar” by “synonymous” or “equivalent”, as such surnames refer to clans (“descent groups” in the anthropological parlance), the immediate outcome being that equivalent clans are found across different ethnicities. “Similar” people from different tribes are not bound to any mutual obligation other than the absolute ban of intermarriage: being the same they should not marry, which would amount to an incest, the worst crime in those societies. Thus, being different in terms of ethnicity and culture does not preclude being the same in terms of clan, which is a counter-intuitive idea for many anthropologists and for many North-East Indians as well, especially those belonging to the younger generations. Anthropologists have been taught in universities that tribal societies consist of clans who share a common culture and a common social structure. And young North-Easterners are immersed in a neo-essentialist, ethnicized India where different people are different by all means: how could they be both different and similar?

The initial question which the research described here tries to address is the origin of such a system, with the view that in the absence of a centralized authority such relations may have been the product of processes of self-structuration. Systems displaying similar features (clanic equivalence implying exogamy) have been documented in other areas of the world, although they are globally

rare: Western Siberia, North America, North-East Africa (Swanton 1909; Verbov 1936; Goodwin 1937; Emmons and Laguna 1991; Shternberg 1999). Very few systematic studies have been undertaken on the topic, with the exception of Robinne, on the Kachin of Upper Myanmar (Robinne 2007), and Günther Schlee in the Horn of Africa (Schlee 1985). Schlee suggested that the origin of equivalences among ethnically different –but linguistically related– people was a series of segmentation processes dividing original clans into branches with different titles, but who still remembered being related. This scenario cannot hold for the North-East India case, which involves culturally unrelated people who arrived on the scene at various times and from different directions.

My data pertains to three particular ethno-cultural entities, to three “tribes” (tribe being the established term in local English): the Tiwa, Karbi and Khasi, and more particularly to the 2.500 km² or so of low hills on the Meghalaya and Assam states borders where the villages of these tribes are interwoven, each village being monoethnic. The differences among these three tribes are obvious. They speak very dissimilar languages, which either belong to different branches of the Tibeto-Burman family (Karbi, Tiwa) or to the Austroasiatic family (Khasi). The Karbi follow patrilineal descent: clan membership and surnames are inherited on the male line. Khasi follow matrilineal descent. And among the Tiwa, descent is ambilineal: according to where the new couple decides to reside, their children will inherit either their mother's or their father's clan and surname. Social and political structures as well as traditional religions (between 30% and 60% are Christians) are less contrasted, but enough to form three (relatively) different cultures. Finally, in the domain of identity, ethnicities are neatly asserted –which may not have been the case in the past. People have no doubt they belong to one particular tribe and that this tribe has “nothing to do” with the next one.

To fully complete this rough picture of the context, two points have to be added. First, before a sharp population growth during the twentieth century, which led to sedentarization, short distance migrations, driven mostly by slash-and-burn agriculture as well as epidemics, were pervasive. Second, inter-ethnic marriages were less than marginal and are now on the rise. Their precise amount is difficult to assess, as the incoming spouses fully adopt the local culture, and even change their surname, actually on the basis of the interethnic surname equivalences. And in interethnic marriages, exogamy between equivalent surnames is, up to my data, strictly respected.

Most elderly persons know about the existence of surname equivalences. In a particular locality, or family, people cannot list the full equivalence relations linking all the clans; they would only cite a few of them; similarly, they most generally cite one to one equivalences relations between one clan of their own tribe and one of the two other tribes. Strikingly however, when put together, the collected equivalences fully agree and draw a very coherent picture (Figure 1, below). The lines in the diagram should be read as “Surname A is equivalent to surname B”, or “people bearing surname A cannot marry people bearing surname B”. The diagram includes exogamic relations internal to each tribe, i.e. the clans within each tribe who are forbidden to marry, each cluster forming what anthropologists call a “phratry”. One notices the striking correspondence between “internal exogamies” and “external” ones, particularly between the Karbi and Tiwa. Among these two tribes at least, exogamy is transitive across the ethnic boundaries: $e()$ being the relation of exogamy, T_n a Tiwa clan and K_n a Karbi clan, $(T_a e(K_a)) \wedge (K_a e(K_b)) \Rightarrow T_a e(K_b)$.

Where did such a coherent system come from? The possibility that, as in the Horn of Africa, equivalences are the links which remained after original descent groups split up, can be discarded,

as the tribes concerned differ in all aspects. Intentional creation also comes to mind as a possible origin. However, we're among tribal societies, with no overarching centralized authority. We have no signs that the neighbouring Hindu *rajās*, with whom the tribes had at different times maintained loose alliances, have interfered with their marriage rules –and this seems hardly plausible anyhow. The highest level authorities which could have regulated marriages are the politico-ritual dignitaries responsible for the settlement of disputes and the performance of rituals, but their authority seldom stretched beyond a dozen villages. And even in this case, what would have been the reason for coordinating interethnic marriages?

To me, the most plausible scenario to account for the origin of equivalences is that of self-organization and diffusion. Equivalences would have emerged locally in the context of interethnic marriages, when different matrimonial norms were confronted. They then would have diffused to other localities and/or connected with similar patterns. Presently, among the Khasi and Tiwa, there exist no other matrimonial rule than clan exogamy. On the Karbi side however, informants describe their traditional but vanished ideal rule as a circulative connubium, i.e. cyclical marriages among their five major clans (A->B->C->D->E->A).¹ Nowadays, the only norm among the Karbi is the avoidance of symmetrical alliances between local lineages, and this is largely adhered to: after a local lineage (i.e. segment of clan) belonging to clan A have “taken a girl” from a lineage belonging to clan B, upcoming marriages between the two lineages will only be allowed in the same direction; B will not “take a girl” from A and the orientation of the relation will not be allowed to reverse for several generations. Any marriage thus creates an asymmetrical relation between “wife-givers” (WG) and “wife-takers” (WT), all men born in the WG lineage being afterwards addressed by their WT as *ong*, indistinctly meaning “father-in-law” and “maternal uncle”. Thus, when Karbis consider a new matrimonial alliance, they must ensure that existing WG-WT relations will not be jeopardized.

My hypothesis is the following: after a Karbi marries a member of another tribe, a WG-WT is established between the partner lineages. The foreign lineage becomes structurally equivalent to a Karbi lineage and becomes identified with a Karbi surname. This will be taken into consideration in future marriages. After several such interethnic marriages happen in the neighbourhood, a full set of equivalences becomes established between the Karbi clans and the non-Karbi clans. This set of equivalences then spreads to the neighbouring localities. An alternative, more plausible and more complex scenario, is that different sets of equivalences were born in several distant localities and that after a while they coalesced into a unified regional system.

The question is: how much time would it take for such a scenario to be completed in a particular population/area? The core of this scenario can be qualified as a weak emergence. It is extremely simple to simulate for ideal conditions and a single locality: each new marriage generates a new WG-WT relation and forbids its reversal. After n interethnic marriages have taken place between n distinct Karbi clans and n distinct non-Karbi clans, n equivalences are established. This could be a matter of two generations only.

Modelling the same process in a moderately realistic way would however involve a lot of factors, making us enter the realm of complexity (both computational complexity and complex dynamic

¹ On similar norms, see e.g. (Needham 1957; Lehman 1963)

systems). First, in the real world, there is little chance that three interethnic marriages involving 2x3 distinct clans will happen in a row within one or two generations. The communities involved are villages of a few dozen houses, thus the frequency of matrimonial unions are limited. Considering the time factor brings to the probability that a marriage between two particular lineages takes place, and first of all that it is contemplated by the families. A prospective marriage corresponds to two households situations matching, possibly to the agreement or feelings of the prospective spouses, and to the mere existence of matchable individuals, i.e. at least the availability of a bachelor of the right age: the local population's structure is a critical factor. Furthermore, the probability that a member of a particular clan marries a member of another particular clan depends on the availability of these two clans in the surroundings. Now, considering the small populations at stake, this situation is not obvious. Second, a simulation of the build-up of equivalences in a local isolate does not take into account what occurs outside. Now what would happen if a similar process happens in the next area? There is little chance that the very same equivalence relations will emerge. So, how will contradictions between two sets of equivalence be resolved if a marriage is considered between people living in both areas?

These rather mechanistic issues don't bother most anthropologists. When describing social structures and norms, anthropologists seldom consider their applicability in a realistic context. I believe that the question of the origin of equivalences cannot be settled in a useful manner by considering the social structure and the norms supposed to regulate it in isolation from their biological environment. What would be the point of showing that the asymmetrical marriage rule might generate surname equivalences if there is very little chance that the proper matrimonial configuration appears over several centuries? This is the reason why I decided to solicit the expertise of statisticians, modellers and ecologists, among others, and set up a working group, ATIMODIS, to decipher the processes at stake in the complex relations between marriage rules, space and population dynamics.

For the time being, ATIMODIS has tried to identify which factors might be critical in the modelling of the hypothesis in question. To start with, a series of simple simulations (under GAMA²) involving only a small population and a simple set of marriage rules have helped to put into light a very critical factor indeed: the fragility of small populations to even seemingly light marriage constraints. Imposing nothing more than the simple rule of clan exogamy ("one should not marry within one own's clan") to a population of 200 individuals divided into three clans, even with optimistic fertility rates, will considerably endanger its survival in less than three centuries. Going a step further by imposing an asymmetrical marriage rule among the clans ("after A has taken from B, it will not be able to give back") will make the population dramatically collapse and disappear within less than three to four generations. As for the circulating connubium, with three clans exchanging, even when a degree of deviance is allowed for, eligible partners become unavailable after a couple of years, preventing any reproduction.

Although the “small population effect” or “demographic stochasticity” is nothing new³, realizing how much any pairing constraint amplified its consequences forced us to somehow let the question

² <https://github.com/gama-platform/gama/wiki>

³ See for instance ((Dyke 1971; Gaines and Gaines 1997; Legendre et al. 1999; Engen, Lande, and Sæther 2003; Drake 2011). For human populations, a “Minimum Viable Population” of 500 has been suggested by (Livi 1949).

of equivalence aside for a while, and focus on the relationships between matrimonial rules and population viability. In which conditions could the prescriptive marriage norms formulated by the Karbi have been applied at all? Our simulations showed that the ideal norm of the circulating connubium, what anthropologists after Lévi-Strauss call the “generalized exchange”, with three or five clans exchanging spouses in a single direction, seems impossible to put into practice in a small population when a majority follows the rule. This incited me to go back to the anthropological literature on generalized exchange. Lévi-Strauss himself had noticed that the structural model he proposed was hardly applicable in practice, both because of population size effects (on which he did not elaborate much) and because of the inequalities among the exchanging parties (Lévi-Strauss 1969, chap. introduction). Indeed, Leach and others had criticized him on the ground that nowhere was generalized exchange statistically dominant (Leach 1962). Lévi-Strauss reacted by arguing that generalized exchange is primarily a “model”: its “reality” (accuracy) does not consist in its statistical existence but in the fact that it depicts the general trend of all concrete alliances in the long term. As a matter of fact, some scholars, with the limited tools of the time (1960s-1970s), had started to show through simulation both that the rule was impossible to put fully into practice and conversely that in the absence of any other rule than simple exogamy, there was always a proportion of marriages corresponding to the norm of generalized exchange (Kunstadter et al. 1963; Gilbert and Hammel 1966). If other aspects of the generalized exchange model still arouse new formalizations and modelizations (e.g. graphs⁴), the study of its demographical context have not benefited from the computational and simulation tools now at our disposal. This is one of the tasks ATIMODIS project wishes to take on.

Although generalized exchange in its full cyclic form has not been documented, cases of populations following prescriptive asymmetrical rules are widespread (Leach 1951; Moore 1963; Löffler 1964; Krige 1975). If simulations show that asymmetrical rule is so detrimental to the demographic structure, how then could it be explained that populations practising such marriages were able to survive? The issue was seldom taken up by anthropologists. Recently however, starting from this very question, a set of studies in Western Australia have brought a very convincing and stimulating answer, and one which compel us to deeply reconsider our methodology, if not our paradigm: a few exchange of partners among local groups could have been sufficient to maintain their demographic viability even while prescriptive alliance remained dominant (Dousset 2005; White and Denham 2007; Denham 2013). Small populations are very rarely complete isolates. Their sustainability cannot be explained without taking into account the inputs from outside, even if these look statistically marginal. Statistically marginal exogamy may prove vital for the survival of small populations.⁵ “Intermarriage ... should be seen as a component of formal marriage system models that opens up local models to form an explicit, culturally recognized, and realistic continent-wide meta-model.” (White and Denham 2007, 6)

Thus the need to move from the level of the village, where most marriages happen, to the regional level, at which inter-villages marriages take place from time to time, in order to understand how the two levels are dynamically connected. In other words, shifting from the (false) local isolate to what ecologists call the meta-population. In this regard, the contribution of the tools used by ecological

4 (Harary and Hage 1996)

5 This converges with conclusions met by paleo-anthropologists. (Bocquet-Appel and Masset 1982).

modelling could be essential for the approach of anthropological complexities such as the interactions between marriage norms and demographics.

The “problem” posed by the negative effects of marriage rules on the demographic dynamics of small populations could in fact be completely reversed. In a functionalist perspective, and at least as a working hypothesis, one could consider prescriptive marriage rules not as a constraint but as an incentive to search for mates outside the group – whatever group – which would counter demographic stochasticity as well as genetic inbreeding.

Modelling the dynamics of asymmetrical marriage rules at the level of meta-populations is however far from being a trivial task. This is where one enters into hardcore complexity (at least to an anthropologist) and where interdisciplinary becomes compulsory. For instance, how did different local matrimonial patterns become a coherent regional pattern? Simulation will obviously be a major component of our approach. The second one will consist in mapping the data available on existing matrimonial links. A set of genealogies I collected in some localities will help to understand the small-scale mechanisms, but hardly any phenomenon of emergence/self-organization. For this purpose, our main corpus will be the Indian electoral rolls, which provide a full size picture of voters with their surnames, including married women and their husband names, and thus of the existing alliances among clans. This set of data has several obvious limitations, among others the inability to show the origin of external spouses, or to show real matrimonial networks. The challenge will be here to devise proper tools that will explore the corpus at successive spatial levels and detect the existence of significant patterns.

For the time being, it is interesting to underline how a very pragmatic problem emerging during simulation, “how to avoid that my population collapses”, has led to a deep re-thinking of the general approach. Going back to the literature about the anthropological theory of alliance, I realized that the problem had not been resolved at all, and that other essential issues as the structuration of alliance patterns at higher levels remained almost untouched. An approach in terms of complexity is not an escape out of the classical anthropological debates; indeed it is a constructive return to them.

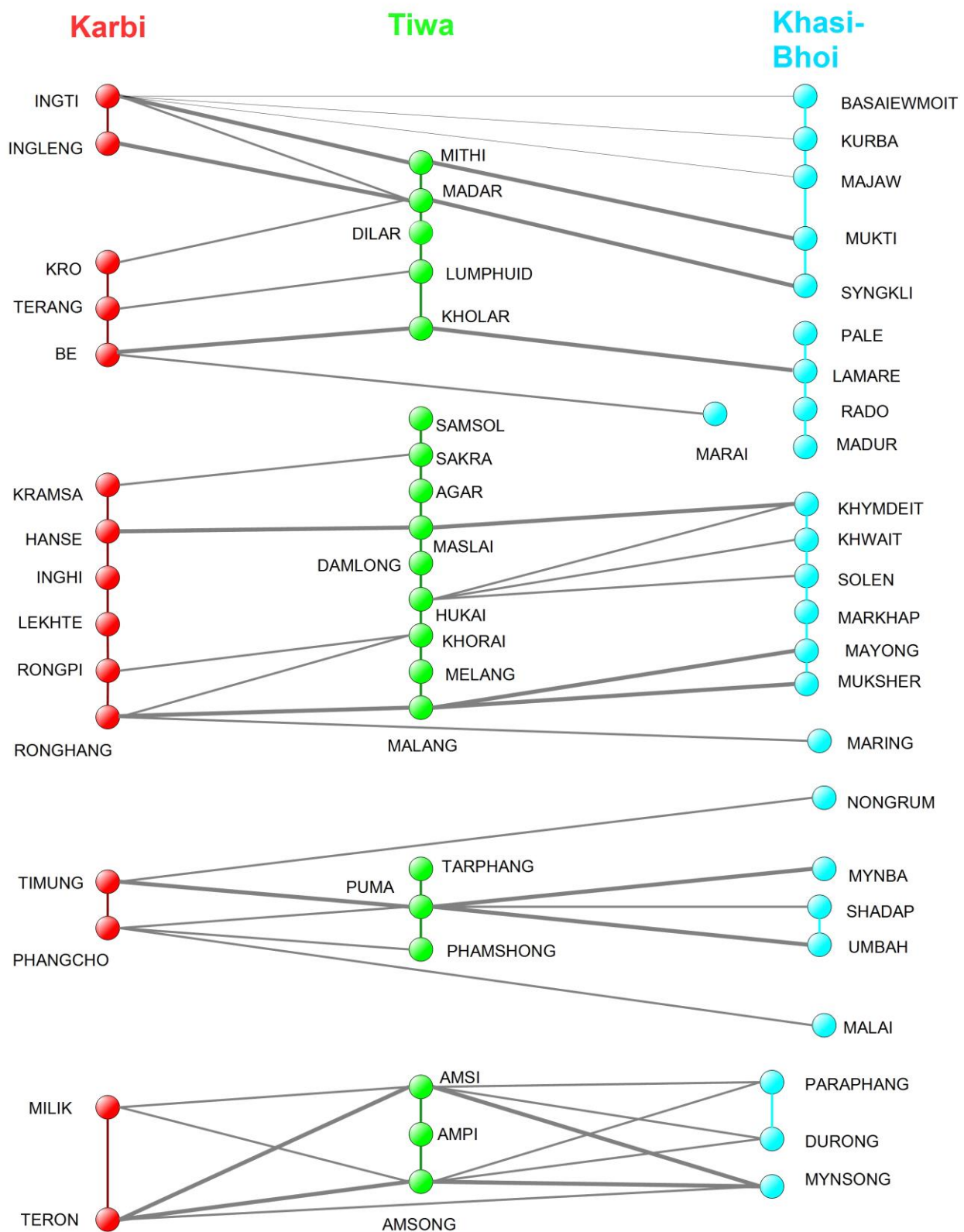


Figure 1 Endo-ethnic and interethnic exogamies among Karbis, Tiwas, and Khasi-Bhois of Assam-Meghalaya borderlands. Dots represent patronymic groups (clans), lines represent relations of exogamy. This diagram highlights the convergence of exogamies within ethnic groups (same color clusters) and across them.

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