Why is "older sibling" called *aka* in the Agta terminology?
Dwight Read

Looking at terminologies as having a generative logic that can be modeled algebraically continues to be fruitful and provides a way to identify why terminologies have their particular features. This is an entire area that has been largely negelected in kinship studies, save for unsuccssful attempts to find association between a typology of terminologies and a typology of forms of social organization. A new case, the Agta terminology, once more shows how the algebraic modeling of the structural logic of terminologies provides a powerful way to gain insight into why terminologies have particular features.   In this case, we find an answer to why, on the one hand, the terminology is descriptive and, on the other hand, it makes an older sibling, younger sibling distinction.

The Agta previously were a hunter-gatherer group in the Luzon area in the Philippines and their terminology has been studied by Tom Headland and published in Ethnology. I got involved in the terminology through Murray Leaf who had been working with Tom on how one might use the KAES program to do an algebraic model for the terminology. Here is the tentative kin term map -- tentative since the affinal part is incomplete and does not incorporate all that Tom describes for the terminology. A complete map would have many more arrows as every consantuineal term has a corresponding affinal term
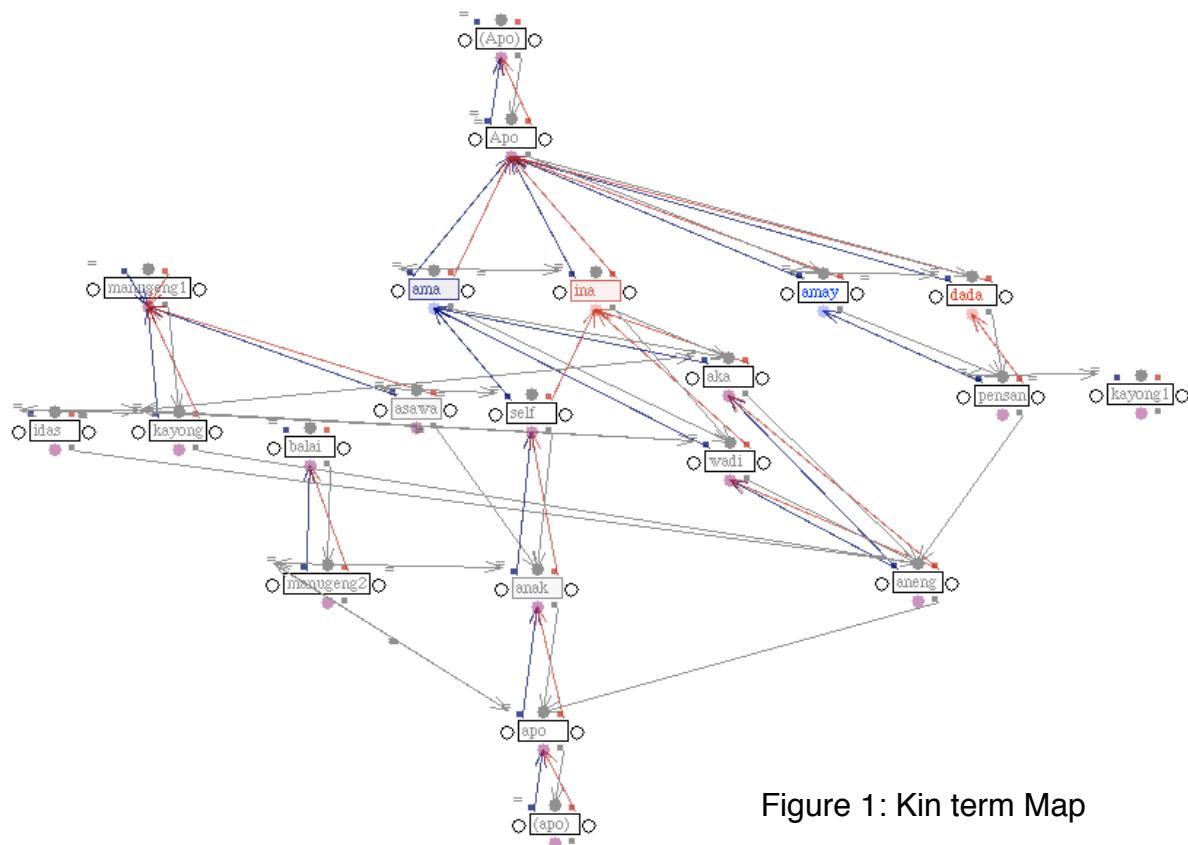
Figure 1: Kin term Map

(via sibling, parent and child links) yet the affinal portion is still well-bounded.

We can begin the analysis by letting father (ama) and mother (ina) (when I use English terms, read them as if they are the Agta terms) be generators. In this terminology, like the American terminology, the kin term map simplifies via structural equivalence (see Figure 2) and the complete simplification (see Figure 3) makes it evident that "parent" = [father, mother] is a generator ("parent" indicates that there is no covering term for [father, mother], just as there is no covering term for [aunt, uncle] in the American terminology).
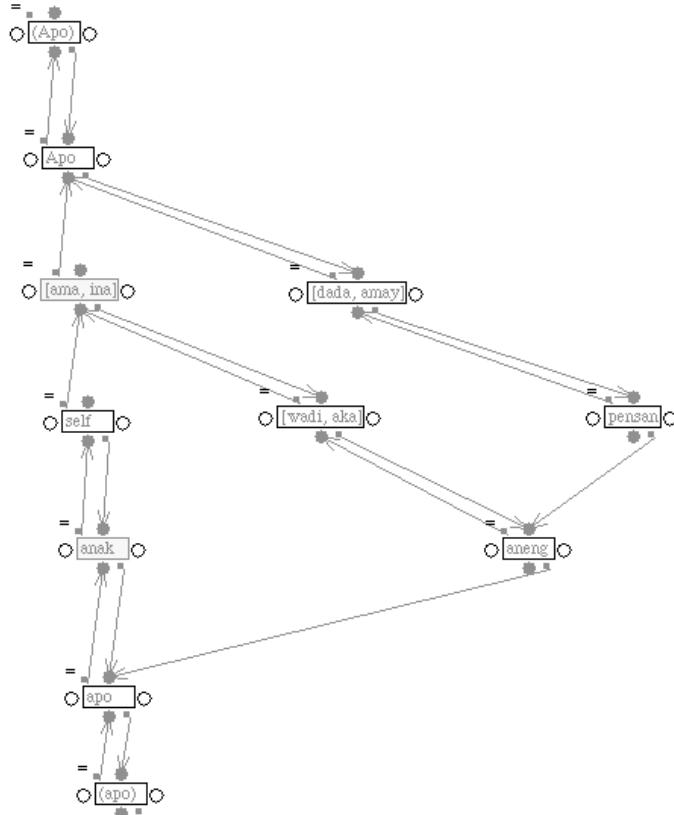
Figure 2: Structural simplification
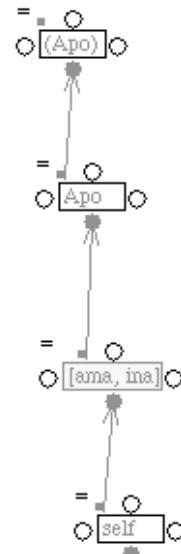
Figure 3: Reduced structure

The reduced kin term map, after removing descending terms, clearly has "parent" as a single generator and also has the equation child of child of child of parent = child of child (see Figure 2, pattern for diagonally descending arrows), which limits the collateral extension of the terminology (this kind of equation shows up in the Shipibo, the Machiguenga, the Punjabi and undoubtedly many other terminologies).

The algebraic analysis generates the kin term map shown in Figure 2 exactly (see Figure 4).

Next, a spouse generator gets added, but unlike the American terminology where parent of parent-in-law = 0 (not a kin term), the Agta terminology has the equation parent of

parent-in-law = parent-in-law (graph not shown). This small difference implies that whereas the American terminology has few affinal terms, the Agta terminology will have many affinal terms and spouse of kin term will be a kin term for any kin term, thus the difference between parent of parent-in-law = 0 and parent of parent-in-law = parent-in-law accounts for why Agta has such an extensive set of affinal terms. This is one example of how the algebraic model clarifies differences between terminologies.
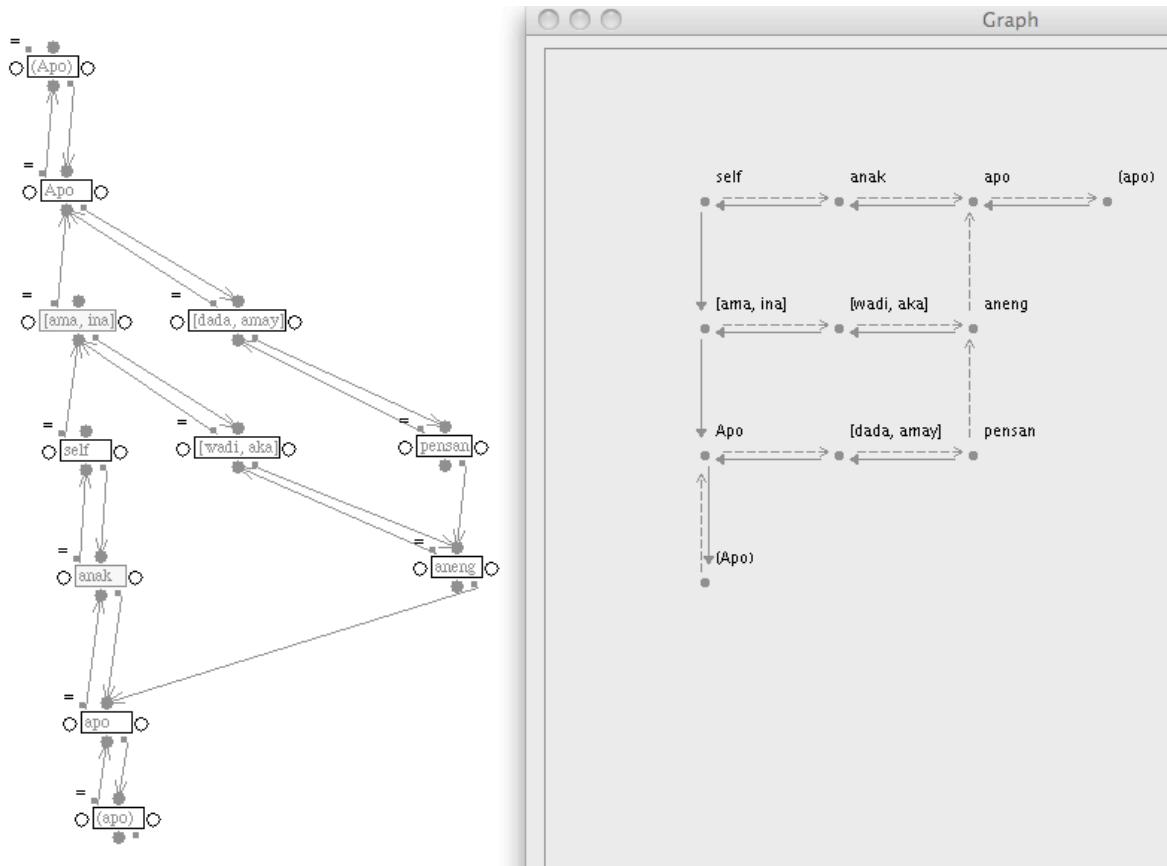

Figure 4: Kin term map on left (see Figure 2) and generated algebra on right (after KAES matches algebra symbols with kin terms). The two structures are isomorphic (the algebra has the descending line as a horizontal line at the top).

More intriguing, in my view, is the matter of why the Agta terminology has older sibling and younger sibling terms. From the algebraic model just described, there is only a sibling term, so the model does not account for this feature of the terminology. So where does the older/younger distinction come from ? One possibility is that is the distinction is added to the terminology in that there is cultural reason for distinguishing between older and younger sibling, even though it is (seemingly) not necessary for the logical consistency of the terminology. This cannot be discounted as a possibility and in this case we would ask Tom Headland, as the ethnographer for the Agta, if there is anything about Agta life and social behaviors that would account for why an older sibling, younger sibling distinction is in their terminology.

But going that route assumes the distinction is not part of the generative logic and is not a satisfactory way to go until we have exhausted ways in which it could part of the generative logic.

For the classificatory terminologies, older sibling/younger sibling enters in directly when sibling is a generating term, but that also is the basis for a classificatory terminology and the Agta terminology is not a classficatory terminology. So that seems to be a dead end as a way to account for the distinction.

Now let me introduce another thread. Alain Matthey de l'Etang and Pierre J. Bancel have published studies (e.g. Bancel, P.J., & A. Matthey de l'Etang, 2005. Kin Tongue. A Study of Kin Nursery Terms in Relation to Language Acquisition, with a Historical and Evolutionary Perspective. *Mother Tongue* 9, 171-190) of the so-called nursery terms papa, mama and kaka. Briefly, they have shown that papa (or baba) and mama (or nana), or variants on these, are highly prevalent in kinship terminologies for father and mother, respectively, regardless of kind of terminology and regardless of geographic region. They have also provided arguments as to why these cannot be assumed to just arise from an infant's first few sounds. From this they argue that papa and mama must be ancient -- predating all extant terminologies. The term, kaka, is also wide spread, but is not universal -- indo-european terminolies do not have a kaka term. When it is present, it is often the term for older sibling or mother's brother; that is, it involves a sibling term.

I've suggested to them the following: since there is no root kinship terminology from which all other terminologies arise, then if their argument is correct mama and papa must have to do with genealogial tracing -- that is, mama identifies a mother relation and papa a father relation through which tracing relations such as mother's father's father would be constructed. Where does kaka fit in? I hypothesize that sibling is sometimes also recognized as a relation through which one does genealogical tracing, so that one has a sibling relation directly, not just as child of parent. This would fit into the descriptive/classificatory difference based on whether or not sibling is a generating term. That is, those groups that had a word for sibling as a direct genealogical connection carried it forward into kinship terminologies and so kaka then is linked to some variant on kin terms involving sibling. The descriptive, Indo-European terminologies do not have a sibling generator and so this would account for the absence of a kaka term in these terminologies.

All of the this is speculative, but it raises the question: Does the Agta have a kaka term? In fact it does! The term, older sibling, is *aka*. So now we have a reason to consider more seriously whether the older sibling/younger sibling distinction arises from *aka* as a sibling generator. But how do we accomodate the fact that the Agta terminology is not a classificatory terminology? If we go back to the logic leading to, for example, brother of father is father, we have the following. For a classificatory terminology, we begin by generating a terminology with the generators {I, G, P} and the equations GG = G (sibling of sibling = sibling), PG = P (parent of sibling = parent) and (say) PPP = PP (or possibly PPP = 0) to make an ascending structure. Then we make an isomorphic descending

structure with generators {I, g, C} and equations gg = g, Cg = C (the isomorphic version of PG = P) and CCC = CC. By using a new symbol, g, in the descending generators, we get the basis for the older sibling (= G) and younger sibling (= g) distinction. From the equation Cg = C we get, via its reciprocal, GP = P (sibling of parent = parent) and now we have a classificatory terminology.

But suppose we do not have the equation PG = P initially! Suppse the ascending structure is generated by {I, G, P} with just the equations GG = G and PPP = PP. Now when we make the descending structure we have generators {I, g, C} and equations gg = g and CCC = CC. The next step is to make P and C reciprocals and to make G and g reciprocals in the algebraic structure. This we do by the equation PC = I (parent of child is self) for the pair of generators P and C, and by Gg = I = gG (younger sibling of older sibling is self) for the pair of generators G and g. The equation Cg = C does not arise and so the equation GP = P does not arise and we do not have a classificatory terminology, but we do have two sibling generators, G (older sibling, or *aka*) and g (younger sibling, or *wadi*). Further, this is consistent with Alain and Pierre's argument about the distribution of the kaka term, namely that it appears to be associated with sibling. (I should note that they show that in Africa kaka has a different pattern, so there is still a ragged edge that needs to be taken into account.)

So once more the algebraic modeling aproach not only makes evident the generative logic of the Agta terminology, but accounts for both the much more extensive group of affinal terms, accounts for the older sibling/younger sibling term, and accounts (given Pierre and Alain's argument) why older sibling is *aka*!