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I am seriously out of my depth with regard to the arcane symbolism and argumentation style that characterize the collection of papers in which Barbosa de Almeida's (BdA 2010) article appears, so I may have misunderstood a lot. If so, *mea culpa.* To limit my misunderstandings, I try to stick to what I know (or think I know) about some aspects of the intersection of human biology with systems of descent, marriage and kinship, especially in Australian Aboriginal societies with their strong similarities to South Asian Dravidian kinship (Read 2010).

BdA (2010:2) says, "we ignore distinctions concerning relative age". I join the chorus of those who find that decision to be problematic, but I protest with considerable trepidation. At least BdA *explicitly* ignores certain kinds of relative ages in the context of Dravidian kinship, and for that *explicitness* he is to be commended.

But, if my reading of his paper is correct, BdA *implicitly* ignores other important "distinctions concerning relative age" that apply to Dravidian and many if not most other kinds of kinship, and he is by no means exceptional in doing so. My concern here is with relative ages of parents, their own children, their spouses and their spouses' spouses as they are linked with each other in sibling-in-law chains. The problem as I see it is best stated in a lengthy paragraph on kinship modeling that I quote from John R. Atkins' (1981:390) CA Comment on Tjon Sie Fat (1981):

> "My principal reservation and regret concerning these new models centers on a key respect in which they are hyper-conservative. Without exception they all conform to a hoary old anthropological assumption that I'll call The Axiom of Generational Closure. By this I mean the tacit but widely accepted supposition that any "normal" kinship system - or at least every proper model of such a system - must entail an infinite or open series of successive genealogical generations each of which is not only discrete but also closed. Models that embody this supposition apply only to societies in which the average or expected F-M age difference (and therefore normally also the average H-W age difference) is zero or negligibly small. But most real societies are characterized by systematic H>W and F>M age differences which often are sizeable. For example, the 14-year F>M age disparity recently reported for the Alyawarra (Denham, McDaniel, and Atkins 1979) cannot be dismissed as atypical for Australian systems, and it certainly is

> too large to be neglected by the kinship theorist. The model that we proposed for the Alyawarra incorporates a finite set of open generations rather than the reverse. It is a 6-patriline, 4-matriline representation in which the generations are discrete, unclosed, and just two (2) in number. Each of the latter winds helically and endlessly down through genealogical time, in direct reflection of the large Alyawarra parental and marital age biases. In this type of model, an intra-generational chain of connections of the form WBWB... does not cycle back to close at ego; instead, it is part of an open, eternal helix that includes ego's FFFF and FF before it reaches ego, and which again returns to ego's patriline at the positions SS, SSSS, etc. A second, complementary helical generation, separate and distinct from ego's own, includes ego's FFF, F, S, and SSS. (Single- and triple-helix systems are also possible but cannot be discussed here.) Recently I discovered that the model just described is, in fact, an independent reinvention of one devised by Ursula McConnel about 40 years ago in the course of her earnest efforts to describe Wikmunkan kinship (McConnel 1939-40, 1950, 1951). Her model seems to have been quite thoroughly misunderstood when not simply ignored; in particular, Needham (1962, 1971) and McKnight (1971) have maligned it and dismissed outright her insistence on the presence of "age-spirals" in the Wikmunkan system."

When Atkins wrote that paragraph, he had no adequate data concerning generation intervals in human societies, but relative ages of parents and their children, and of wives and their husbands, have become much clearer in recent years (Fenner 2005, Binford 2001). In Dravidian or Dravidian-like societies in Aboriginal Australia, these relative ages are just as real as those having to do with siblings and cross-cousins and may be even more important.

The duration of a generation interval, defined as the age difference between a parent and a child, is a major determinant of the age structure of populations. Many academic disciplines have longstanding traditions of assuming that human generation intervals are 20, 25 or 30 years (or some other convenient fiction) and that female and male generation intervals are the same length (Fenner 2005). In anthropology, these assumptions typically yield classic kinship diagrams in which generations are depicted as horizontal strata (male and female generations are the same length) and the vertical separation between generations is unspecified and arbitrary. Possibly these began as nothing more than benign simplifying assumptions in kinship modeling, but they may be more accurately described as misrepresentations of reality when we are concerned with human biology.

Table 1 (next page) shows two ways to approach this matter without making such assumptions, first by measuring and comparing age differences between parents and their children (col2 and col3), second by ascertaining age differences between wives and their husbands (col4). Both approaches are problematic, especially in non-literate and non-numerate societies, but inexact measures may be more useful than no measures at all.

On average, the Australian Aboriginal maternal generation interval in Table 1, col2, is about 28 years just as it is for our species as a whole, but the Australian Aboriginal paternal generation interval in col3 is about 42.6 years. This means that the length of a maternal generation interval in Aboriginal Australia is only 66% of a paternal generation interval, or to say the same thing from the "opposite direction", a male generation is 1.5 times as long as a female generation. Not surprisingly the 14.6 year difference between Australian Aboriginal maternal and paternal generation intervals in col4 is equal to the mean wife-husband age difference (col3 minus col2) in those societies. Clearly the mean male generation interval in Australian Aboriginal societies is exceptional - about 10 years greater than that of men throughout the rest of the world – but it characterizes the continent as a whole rather than one or a few societies selected specifically to show this feature.

col1	col2	col3	col4	col5
	Maternal Generation Interval	**Paternal Generation Interval**	**Wife-Husband Age Difference**	**Number of Cases**
More Developed Countries	27.3	30.8	3.5	151
Less Developed Countries	28.3	31.8	3.5	40
Non-Australian Hunter-Gatherers	28.0	33.4	5.4	132
Australian Aboriginal Hunter Gatherers	28.0	**42.6**	**14.6**	25

Table 1. Mean male-female generation intervals and wife-husband age differences. Approximate values based on data from 191 nations (Fenner 2005) and 157 hunter-gatherer societies (Binford 2001, Table 8.07).

Asymmetric generation intervals in these societies produce an age bias that precludes the formation of symmetric generations such as those that characterize classical models of Kariera and Aranda kinship. Rose (1960 *passim*), citing ethnographic reports that stress the prevalence of so-called "gerontocratic polygyny", the widespread preference for MBD (but not FZD) marriage and the paucity of data showing actual bilateral sibling exchange marriage among Kariera- and Aranda-type societies, argues that Kariera and Aranda societies cannot be characterized accurately by classical models of Kariera and Aranda kinship.

Recent demographic data suggest that Rose was right. The large age bias right across Australia means that a man's FZD is, on average, 29.2 years older than his MBD. Here the kinship terms for FZD and MBD not only point in "opposite directions" through FZ and MB, but also the one through FZ points "upward" by 14.6 years, while the one through MB points "downward" by 14.6 years in a structure perhaps best represented by a lattice with precisely measurable angles and distances. These relationships suggest that ignoring distinctions concerning the *relative age* of spouses probably would have been as incomprehensible in 19th-20th century Australian Aboriginal societies as ignoring distinctions concerning their *sexes* would have been in 19th-20th century Western societies.

Under these conditions, the emergence of symmetric, closed generations based on bilateral sibling exchange marriage (Ego marries MBD, Ego's Z marries MBS) is impossible, and attempts to save the appearances (Koyré 1957:16) by ignoring the biology almost certainly will fail. Age asymmetries inevitably distort generations away from the ethnocentric Western ideal of symmetry that so often characterizes traditional descriptive and explanatory models of Dravidian and other types of kinship. Thus asymmetric models that incorporate relative age are distinctly different from symmetric models that "ignore distinctions concerning relative age".

Finally, wives on average are older than their husbands in only 2 of the 348 societies listed in Binford's and Fenner's tables; i.e., the wife-younger-than-husband asymmetry that is most exaggerated in Aboriginal Australian societies appears to be virtually a human universal, varying across the planet only in degree. This suggests that classic, symmetric kinship representations that appear to embody a benign simplifying assumption concerning parent-child and wife-husband relative ages may instead embody a possibly ethnocentric misrepresentation of reality concerning our species as a whole.

As noted above, kinship in Australian Aboriginal societies has strong similarities to South Asian Dravidian kinship, but the demography appears to be different. At the very least, Binford's relative age data for South Asia indicates that those societies display 3-5 year differences between female and male generation intervals rather than anything even approaching the extreme difference of 14.6 years that characterizes Australian Aboriginal societies. So the irreality of traditional symmetric models may be somewhat less misleading for South Asian Dravidian kinship than it is for similar Dravidian or Dravidian-like kinship in Aboriginal Australia, but a 3-5 year difference is not inconsequential and its implications need to be investigated.

[NOTE: This is a very brief summary of work on these issues that has been underway for several years, but a definitive paper that deals with them systematically, comprehensively and satisfactorily has not yet emerged. Several unpublished works, listed in the second part of the References below, approach the problems from various directions, contain many relevant diagrams and tables, are heavily documented and are on the web. Please consult them for further information pending publication of a satisfactory finished product. Many thanks to Doug White

for his invaluable contributions to the development of these ideas, and to Dwight Read and F.K. Lehman for their comments on an earlier version of this Letter. The remaining numerous problems are mine alone. … WWD]

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