Double Helix Exchanges with Doug White

2001+

In these email exchanges Doug asks me a lot of important questions about Alyawarra kinship and genealogical data, and I attempt to answer them. Several of the questions deal with problems that John Atkins and I deliberately omitted from the Double Helix article to make it fit into the *American Ethnologist*. Others deal with the processes I used to collect the data and that Chad McDaniel and I used to analyze it. All things considered, you'll know a lot more about how we arrived at our conclusions in 1976-78 if you read this exchange from 2001+.

* * * * * *

First Pass
From: "Douglas R. White" <drwhite@orion.oac.uci.edu>
To: Woodrow Denham <wdenham@ncia.net>
Date: Sun, 16 Dec 2001 11:18:05 -0800 (PST)

This is my first pass at identifying the six equivalent patrilines cross-cut by 4 equivalent matrilines (which you can actually see as a big z starting at the top of the green patriline) and the generational adjustments of 2/3rds for females --- matching the kinship terminology structure.

Very very nice result. Looks a bit messy because there are of course various types of marriage in there, but amazingly congruent with the double helix skewed marriage model, as it should be.

Will not work much more on it now, but wanted to get a first pass to see about feasibility. The algebraic method of identifying equivalence classes is actually quite simple.

Do you also have an assignment file somewhere of how individual couples fit the global model. If so, we can cross-check. If not, this is already a great advance. Its clearly not that the kin terms define a parallel universe, but that they do actually map nicely onto the genealogical network, skewed generations and all.

. . . Pretty much done now, going to leave it alone for a while. Your model is obviously correct, for a host of reasons. Later this year some of the more specific hypotheses about this can be tested quantitatively.

Doug White

* * * * * * * * * *

Spelling of Alyawarra
From: Woodrow Denham wdenham@ncia.net

To: "Douglas R. White" drwhite@orion.oac.uci.edu

Date: 20 Dec 01

Alyawarra with a double-R. The Australian Institute of Aboriginal and Torres Straights Island Studies in Canberra has made a major effort in recent years to standardize the spelling of Australian Aboriginal language groups. I'm not sure they got all of them right, but all least they got them the same way every time, so now you can find them on the web. Their spelling of "my people" is Alyawarra (with a double-R near the end) and I happily accept that. Could you please add another "R" to Alyawara (-> Alyawarra) wherever it occurs in the titles, texts and graphics so we won't have to go back and change things later? It's a small point but an important one.

* * * * * * * * * *

Wrong Marriage couple 127 - 274

From: Woodrow Denham <wdenham@ncia.net>

To: "Douglas R. White" <drwhite@orion.oac.uci.edu>

Date: Fri, 21 Dec 2001

> Are you sure that couple 127 - 274 aren't miscoded as to
> moiety and section (and also their children). I find nothing
> inconsistent in recoding them to align correctly with the structure.

While you're teaching me how to operate your software, let me show you a bit about how to operate the Alyawarra dataset.

1.   My raw data is in New Hampshire rather than here in Dubai, so I can't just look in the box and check for an error. Until I have it at my fingertips again, we'll have to do some sleuthing.

2.   Man 127, woman 274 and their children lived in the research area from Day 150 to Day 180, only 30 days (Fields 12-13). Since I didn't get to know them as well as I knew the fulltime permanent residents, I don't know the answer off the top of my head.

3.   Since 127 and 274 joined the research population 150 days into the research, after I had finished taking the portraits I used to elicit kinship terms, I don't have photos of them to jog my memory. That also means that I don't have their English-language names with me to serve as memory joggers either, for English-language names came with me on the portrait files. That is why the genealogical data file does not contain names for males 113 to 140 and females 262 to 280. I'll add the rest of the names the next time I have access to them.

4.   Man 127 has no known parents (999,999). That means he had no known siblings either. Furthermore, his language group membership code (Field 7) is 2=Aranda; i.e., he is not Alyawarra. This means that his Alyawarra section membership was "computed" on the basis of his Aranda subsection membership when he entered the Alyawarra population, perhaps when 274 married him. So he was a kind of wild card or free agent. I could have misidentified his

moiety and/or section membership, but for reasons to be introduced below, I don't think I made a mistake. However, since there is no good way to check them directly from here, I put this line of reasoning on hold for a moment.

5.   Since 127 is coded as a member of Section 4 (Ngwariya) and his children (128-131, 275-276) are coded as members of Section 2 (Burla), the section membership of the kids is right relative to that of their father. If there appeared to be an error in the section code for 127 only, or for only one of the children, I would infer that a typo had sneaked into the data. But since the father's and children's sections are correct relative to each other, I suspect that all of them are correct.

6.   Woman 274 is Alyawarra, and is the full sister of 030 Banjo Morton and 170 Lady Lewis. The parents of all of them are 357 and 325, both of whom are deceased. I knew Banjo and Lady quite well and am confident that their section memberships are OK. Since 030, 170 and 274 all have the same moiety and section codes, I am confident that the codes for 274 are OK.

7.   Since 274 belongs to Section 2 (Pityara) she should be married to a man of Section 1 (Kamara), but in fact her husband is in Section 4 (Ngwariya). The problem then is that 127 is in the wrong section relative to 274. I am confident that we have a "wrong marriage" here.

8.   In summary: 274's section is right relative to her own parents and siblings; 127's is wrong relative to 274's; their kids (128-131, 275-276) are right relative to 127's.   These are classic symptoms of a "wrong marriage".

In the kinship paper, in the middle of page 16, last sentence before the header, I say: "Finally, only one marriage conflicts with the section relations expressed in Figure 1." I'm pretty sure 127-274 is it, and you found it. Your software is pretty clever.

It's possible to fudge kinship terms because almost everybody is multiply related to almost everybody else, and everything is "relative" in the first place. But fudging section memberships is harder since they are "absolute". If you were to change one of them (in this case to align 127 "properly"), 127 would no longer fit into the Aranda system when he went back to Alice Springs, and his kids wouldn't fit anywhere unless he fiddled the kids' sections too, and so on ad infinitum. And he couldn't change his wife's section membership since her whole network of relations among the Alyawarra presupposes that she is whoever she is. So, when all else failed, they just told the truth. I'm confident that 274 brought home a husband from the wrong section, but I'll check further the next time I'm in New Hampshire.

Woody

* * * * * * * * * *

Marriage Order
From: Woodrow Denham wdenham@ncia.net
To: "Douglas R. White" drwhite@orion.oac.uci.edu

Date: Sat, 22 Dec 2001

> To test the hypothesis about earlier marriage to older women,
> I need to know: is the order of marriages also the chronological
> order of marriages?

Not necessarily. There was no way that I could verify marriage order independently, so I gave up on that one.   In the records below for 023 Dick Mill and 029 Wallaby Moss, both of whom have three known wives, you will notice the following:

023 Dick Mill has three wives all of whom are alive. Their ID numbers are 184, 201 and 202, and they are listed in that numerical order. Generally speaking, that order reflects the decreasing age order of the three women, and in this case it probably reflects the order in which Dick married them, but I don't know that for a fact.

029 Wallaby Moss has three wives as well. The first one (405) is dead and two of them (186, 220) are alive. The dead one appears first, followed by the two living ones in increasing ID number order. Again, this order probably reflects the order in which Wallaby married them, but still I don't know that for a fact.

01 0022 023 1 43 09 1 1 1 58 2 001 294 0   304 354 184 201 202 1 Dick Mill
01 0027 029 1 46 10 1 2 4 42 2 001 294 0   414 337 405 186 220 1 Wallaby Moss

A closely related problem is that of working with people who do not talk about anybody who is dead. If the person sitting in front of me had a dead parent, I could legitimately infer that the parent was there at some point and could elicit information about that dead person using judicious circumlocutions. But any attempt to learn anything about a dead person who left no living children in the population not only failed but also alienated the informants. So I could ask about missing parents if I had one of their children in my sights, but I could not ask about missing wives who left no children. Consider the records for 001 Jim Austin and 002 Billy Ross.

001 Jim Austin is shown here as having only one wife (154) who is almost the same age as Jim. He may have had other wives earlier in his life, but when I was there he had no living children by any other wife, so I had no way to verify that he had had other wives. His record shows only the one wife.

002 Billy Ross is about the same age as 011 Jim Austin and he too is shown as having only one wife (193 Maggie) who is a great deal younger than he is. He too probably had other wives earlier in his life, but since they left no living children in the population, they do not appear in the database.

01 0001 001 1 92 19 1 1 1 44 2 001 294 0   305 363 154   1 Jim Austin
01 0002 002 1 82 17 1 1 1 58 2 001 294 0   303 362 193   1 Billy Ross

If I couldn't be approximately 100% confident of what I put into the database, I left it out. The upside is that if I entered it, I think it is right. The downside is that I omitted some potentially valuable information that I could not confirm.

Perhaps there is a partial workaround. If you have a man with multiple wives and want to know the order in which he married them, you could sort his children by all wives in decreasing age order and see which woman is the mother of the oldest children. That certainly wouldn't tell you everything you want to know especially when you factor in infant mortality, but it might be at least suggestive.

Woody

* * * * * * * * * *

Relative Sex Definitions and Kinterm Reciprocals
From: "Douglas R. White" <drwhite@orion.oac.uci.edu>
To: Woodrow Denham <wdenham@ncia.net>
Date: Mon, 21 Jan 2002 10:11:22 -0800 (PST)

Question I could not answer looking at Alyawarra article:
Sex of speaker is/is not relevant referring to G0 and
through G+2?

Subject: I need better definitions
of the relative sex definitions of terms 2,3, also
9,12,13,16,17,18

From: <wdenham@ncia.net>
To: <drwhite@orion.oac.uci.edu>
Date: Thursday, 31 Jan 2002

> My question was really about that table - esp. terms 2 and 3,
> where the same kin types have * and + under two different terms.
> Often there is no listing for the speaker of the other sex to be
> found.

Perhaps I don't entirely understand the question, for I'm not entirely satisfied with the following answer. If I'm off target, set me straight.

Please remember that I'm excavating much of this from memory that has been locked securely for almost 20 years. If I say something that doesn't make sense, let's work on it until I get it right.

Please look at **Table 1** and **Table 2** together. They are conceptually integrated but physically separated since we couldn't fit everything onto a single page. In order to keep the tables as uncluttered and compact as possible, we omitted a few of the finer points. In retrospect it's clear that we shouldn't have done that.

Eventually the material in this message should be published. Although FTSF understood it, I think this is precisely where Scheffler misread the paper.

Let me begin with some easy examples and move toward the hard ones.

Example 1.

Subsection: A1
Term: 1 arengiya.
The term appears in the fourth position in Tables 1 and 2.

Table 1 says 1 arengiya is used:

… By both male and female EGOs to mean FF + FFZ (unmarked)
… By male EGOs to mean SS + SSD (+)
… By female EGOs to mean BSS + BSD (*)

Table 2 says two things:

… In the EGO column, 1 arengiya is used by both males and females (Table 1 says all use it for FF/FFZ; males use it for SS/SD, females use it for BSS/BSD).
… In the ALTER column, 1 arengiya always is self-reciprocal: i.e., both male and female ALTERs apply that term to EGO when any EGO applies it to them.

Example 2.

Subsection: A1
Terms: 10 awaadya, 11 anguriya, 12 adiadya.
These terms appear in the first, second and third positions in Tables 1 and 2, and work together as a set.

Table 1 says:

… 10 awaadya is used by both males and females to mean EB (unmarked)
… 11 anguriya is used by both males and females to mean EZ (unmarked)
… 12 adiadya is used by both males and females to mean YB/YZ (unmarked)

Table 2 says several things:

… In the EGO column, 10 awaadya is used by both males and females to refer to male ALTERS only (Table 1 says all speakers use it for EB).

6

… In the ALTER column, 12 adiadya is used by male ALTERs when any EGO applies 10 awaadya to them.

… In the EGO column, 11 anguriya is used by both males and females to refer to female alters only (Table 1 says all speakers use it for EZ).
… In the ALTER column, 12 adiadya is used by female ALTERs when any EGO applies 11 anguriya to them.

… In the EGO column, 12 adiadya is used by both males and females to refer to alters of both sexes (Table 1 says all speakers use it for YB/YZ).
… In the ALTER column, 10 awaadya is used by male ALTERs when any EGO applies 12 adiadya to them.
… In the ALTER column, 11 anguriya is used by female ALTERs when any EGO applies 12 adiadya to them.

The reasoning outlined in Examples 1 and 2 applies directly to all of the terms in Subsections A1, A2, C2, B2, D1 and B1. Also it applies to term 5 adardia in D2.

Both terms in Subsection C1 and the three remaining terms in D2 are more complicated.

Example 3.

Subsection: D2
Terms: 13 angeliya, 15 adnaidya, 14 algyeliya
These terms appear just below the center line in Tables 1 and 2, and work together as a set.

Table 1 says:

… 13 angeliya is used by both males and females to mean FZS/MBS (unmarked).
… 15 adniadya is used by both males and females to refer to MBS (unmarked). It refers specifically and exclusively to one's proper MBS, not to close or distant classificatory MBS.
… 14 algyeliya is used by both males and females to mean FZD/MBD (unmarked).

Table 2 says several things:

… In the EGO column, 13 angeliya is used by both males and females to refer to male ALTERS only (Table 1 says all speakers use it for FZS/MBS).
… In the ALTER column, 13 angeliya is used by male ALTERs when any EGO applies 13 angeliya to them; i.e., in this case, 13 angeliya is self-reciprocal.
… In the ALTER column, 14 algyeliya is used by male ALTERs when female EGOs apply 13 angeliya to them.

… In the EGO column, 15 adniadya is used by both males and females to refer to male ALTERS only (Table 1 says all speakers use it for MBS). This term is used specifically and exclusively for proper MBS, and does not apply to close or distant classificatory MBS.

… In the ALTER column, 13 angeliya is used by a male ALTER when a proper FZS applies 15 adniadya to him.
… In the ALTER column, 14 algyeliya is used by a male ALTER when a proper FZD applies 15 adniadya to him.

… In the EGO column, 14 algyeliya is used by both males and females to refer to female ALTERS only (Table 1 says all speakers use it for FZD/MBD).
… In the ALTER column, 13 angeliya is used by female ALTERs when any EGO applies 14 algyeliya to them EXCEPT when ego is a proper MBS in which case the proper reciprocal is 15 adniadya.
… In the ALTER column, 14 algyeliya is used by female ALTERs when female EGOs apply 14 algyeliya to them; i.e., in this case, 14 algyeliya is self-reciprocal.

Example 4.

Subsection: C1
Terms: 2 anyainya, 3 aidmeniya.
The terms appear in the fifth and sixth positions in Tables 1 and 2, and work together as a set.

Table 1 says:

First:
… 2 anyainya is used by both males and females to mean MM/MMB (unmarked). This seems to be the "core" meaning of the term.

Second:
… 2 anyainya is used by females to refer to DS/DD (self-reciprocal).
… 2 anyainya is used by males to refer to ZDS/ZDD (self-reciprocal).
… 2 anyainya is used to refer to MMBSS/MMBSD (self-reciprocal).

Thirdly:
… 3 aidmeniya is used by females to refer to DS/DD (NOT self-reciprocal).
… 3 aidmeniya is used by males to refer to ZDS/ZDD (NOT self-reciprocal).
… 3 aidmeniya is used to refer to MMBSS/MMBSD (NOT self-reciprocal).

The joint usage of 2 anyainya and 3 aidmeniya for MMBSS/MMBSD and FFZDS/FFZDD is represented in Figure 4, G0, C1 - on the right side of the figure.

Also see Table 4, the intersection of terms 2 and 3 with terms 2 and 3:
… term 2 with term 2 = 117 cases
….term 2 with term 3 = 211 cases
… term 3 with term 3 = 0 cases

I haven't had time to look in my field notes for anything that tells me the conditions under which one would use anyainya self-reciprocally rather than use anyainya - aidmeniya as a reciprocal pair. I'll try to find something tomorrow.

Hope this helps.

Woody

* * * * * * * * * *

More on Kinterm Reciprocals

From: "Douglas R. White" <drwhite@orion.oac.uci.edu>
To: Woodrow Denham <wdenham@ncia.net>
Date: Sat, 2 Feb 2002 12:15:49 -0800 (PST)

Yes, your reply was very helpful.
To keep it simple let me ask my question for one set of terms

Table 1 says 1 arengiya is used:
1 By both male and female EGOs to mean FF + FFZ (unmarked)
2 By male EGOs to mean SS + SD (+)
3 By female EGOs to mean BSS + BSD (*)

2: yes, and I see under B2 there is another term for
 female EGOs to mean SS + SD (*)
but for 3: I do not see what
 male EGOs use to mean BSS + BSD (+)

THAT IS WHAT WAS MISSING FOR ME (and a few other examples, which
you will see once you check table 1).

Doug White

From: <wdenham@ncia.net>
To: <drwhite@orion.oac.uci.edu>
Date: Sun, 3 Feb 2002

> I do not see what male EGOs use to mean BSS + BSD (+).
> THAT IS WHAT WAS MISSING FOR ME (and a few other examples,
> which you will see once you check table 1).

Let's look at **Figure 4**. Alyawarra kinship terms used by a male ego.
- In G0, the male ego applies 10 awaadya and 11 anguriya to his elder siblings and 12 adiadya to his younger siblings. These are classificatory terms that he applies to proper siblings, to close classificatory siblings such as FBS/FBD, and to increasingly distant classificatory siblings.
- In G-1, directly below ego in Figure 4, there is a male symbol that represents the male ego's sons AND brother's sons (i.e, close classificatory sons) AND ego's FBSS (i.e., somewhat more distant classificatory sons). Ego refers to all of these males as 16 aleriya.

9

He also uses 16 aleriya to refer to an increasingly fuzzy set of remote classificatory sons who lie outside the scope of the Figure.

▪ In G-2, directly below the proper and classificatory sons who a male ego calls 16 aleriya, we see a male symbol that represents all of the sons of ego's proper and classificatory sons, and male ego calls ALL of them 1 arengiya. Note that 1 arengiya applies as well to the daughters of a male ego's proper and classificatory sons. In other words, for a male ego, 1 arengiya = SS/SD and BSS/BSD. Also notice at the top of Figure 4, in G+2, that ego refers to his proper father AND his father's proper and classificatory siblings with that same term; i.e., 1 arengiya = FF/FFZ and others classified as such in G+2.

The minimal illustrative glosses that I included in **Table 1** obviously are TOO minimal, but I don't have to go far beyond what I included to get into some rather confusing complications that would have made Table 1 utterly unintelligible. Just as an example, consider 10 awaadya which is glossed as EB. When it is used for a proper full brother, the computation of younger-older is based strictly on relative ages of ego and alter. But when it is applied to half-brothers or classificatory brothers (father's brother's sons) how does the "elder" part of the gloss work? Is it computed "directly" on the basis of relative ages of ego and alter, or "indirectly" on the basis of relative ages of ego's father and ego's father's brothers, or perhaps both as half-brothers proliferate and the scope of the term expands to include distant classificatory brothers? Rather than clutter Table 1 with these complexities, we decided to keep it simple and say only that 10 awaadya = EB. But that may have been a bad decision.

I hope this explanation covers the whole set of missing (i.e., implicit) terms that you can't find. If not, please try again.

Rare Terms

In addition to implicit items that don't appear explicitly enough, I encountered and duly recorded several instances of a few very specialized kinship terms based on the "proper-classificatory" distinction that we omitted from the double helix paper because they were so rare as to be statistically invisible. For example:

▪ "gnaldena" - a rare term applied to proper younger sister
▪ "agenduriya" - a rare term applied to proper sister's child
▪ "maliya" - an even rarer variant form of "agenduriya"

In addition, there are some other anomalies we ignored, including the following:

▪ "undyaidya" - a rare term used sometimes as the reciprocal of 21 amburniya (ZH) and probably related to "gnaldena"
▪ an un-Aboriginal "Omaha" pattern described at the top of page 11 in the original article.

In the grand scheme of things, investigating these rare and anomalous forms could be likened to counting angels on the head of a pin, but at some point it might be worthwhile to explore them since they may hold secrets waiting to be discovered.

Glossary

Using the Glossary to study kinship terms: If you would like to examine my notes concerning ALL of the Alyawarra kinship terms that I collected, including the rare ones, you can use the following search procedure. It is a bit less elegant than it could be, but is entirely robust, facilitates both data entry and data retrieval, works on every term and every file in the Archive with no special software and no programming, and is easy to use with about five minute's practice.

To display all of the kinship terms, do the following:
   ▪ Open Windows Explorer
   ▪ In the Archive, open /02c Australia /Alya01 Alyawarra Header /H2 Glossary.
   ▪ Click H2b Glossary to open the Excel spreadsheet that contains the working draft of the Alyawarra glossary.
   ▪ On the menu bar, at /Data/Filter, make sure AutoFilter is checked ON.
   ▪ In the column header of Column B, Domain, click the AutoFilter button to open it.
   ▪ Scroll down to R01 Kinship Term and select it.
   ▪ The spreadsheet displays only the kinship terms, and includes a brief key to abbreviations in the row immediately below the column header.
   ▪ As time permits, I'll add more information about each kinship term, and add more terms in all domains.

To see all of my field notes for each kinship term, do the following:
   ▪ At the Glossary, select a kinship term from Column A, Term, and copy it to the clipboard.
   ▪ Open Windows Explorer.
   ▪ In the Archive, open /02c Australia /Alya03 Fieldwork /AA01 Field Journals /FJ2 Year at MacDonald Downs.
   ▪ Open the "Search for Files and Folders" utility.
   ▪ At the "Containing text" field, paste in the selected kinship term and click the Search button.
   ▪ The names of all files that contain the term appear in the file list.
   ▪ Open a file, press ^F Find, paste the term into the "Find what" field, and search for all instances of the term in the text.

Unfortunately finding something in the Excel spreadsheet may not be easy for Excel does not yet include a "Sounds like" search capability as Word does. So you have to know how a word is spelled or browse imaginatively to find it in Excel. Maybe "Sounds like" searches will appear in the next version of Excel.

Obviously you can generalize these instructions slightly to find any Alyawarra term in any domain in the glossary, then search any directory or subdirectory in the Archive for instances of the term. Perhaps HRAF or somebody else has developed a "universal ethnographic glossary search engine" that I don't know about. If not, these simple procedures could handle individual glossaries for every ethnographic data set, or a mega-glossary for all ethnographic data sets.

The multitude of possible connections between ego and his close kin, between ego and the increasingly fuzzy halo of multiply-classificatory kin that surround him out to the horizon in all directions, the computational problems associated with something as simple as the younger-older distinction, and the alternate terms and patterns detectable within the data obviously reflect a real world that is quite messy. But as you dig deeper into the data, I'm optimistic that your network analysis will continue to reveal a lot of regularity even within what has the potential for degenerating toward chaos as soon as you move beyond one's closest primary kin.

Woody

* * * * * * * * * *

Saying Too Much?

From: "Douglas R. White" <drwhite@orion.oac.uci.edu>
To: <wdenham@ncia.net>
Date: Sun, 3 Feb 2002 11:49:09 -0800 (PST)

>Doug ..... Perhaps my answers to your questions are too long.
I'm using your questions as opportunities to develop revisions or
expansions or new ideas, but perhaps you prefer shorter answers,
as in: male EGOs use arengiya to mean BSS + BSD (+). Feedback,
please. .... Woody
>

good. That's what I had deduced, and I wanted to check if my
deductions are correct. So between the figure and table and the
reciprocal term, most everything can be deduced correctly.

Its helpful for me to have the long explanations too because I
can see how you think about it and decisions you made in writing
about it. Everything seems to be in place, then, but I needed to
check.

* * * * * *

Drifting Off to Double Helix

From: <wdenham@ncia.net>
To: <drwhite@orion.oac.uci.edu>
Date: Mon, 4 Feb 2002

Doug,

> Would you agree that these folks have an Aranda terminology, and
> they hold to the Aranda model in marriage decisions in absoluto (there are
> no marriages that violate Aranda rules). Then, IN ADDITION, the systems

> 'drifts' off to a realization of Aranda that is double helix, and that seems to result
> because of the age skewing.

> My first guess is that there are no SPECIAL terms that are definitive
> indicators of the double helix model. They could just as easily have
> headed statistically towards some other realization of a double helix, say
> with a ½ rather than the 2/3 generation ratio that happened to fit their
> demography (but of course the model they are most likely to fit statistically is
> predicted by the demographic generation ratio).

If I were writing this I would shift the emphasis. Rather than saying that they hold to the Aranda model then drift off to a double helix realization of it, I would be inclined to say that the traditional Aranda model is the *first half* of the system. It is based on what John Atkins**** called "the Axiom of Generational Closure which entails an infinite or open series of successive genealogical generations each of which is not only discrete but also closed." Insofar as such a model applies to the Aranda it also applies to the Alyawarra and to various other groups in Central Australia.

But that is an incomplete, perhaps simplistic, view of their world. The Aranda model based on generational closure isn't "the model", but rather is the first half of the model and the half that anthropologists such as Radcliffe-Brown detected almost a century ago. Unfortunately that first half became fossilized in the literature as if it were the whole thing.

The generationally closed model is the first step, and a common first step in Central Australia, but from that first step we must go on to the second step which is to ask about age skewing. If no age skewing exists, then we can stop with the generationally closed model, i.e., a "flat" model. But if age skewing does exist, we must turn to Tjon Sie Fat for help in ascertaining which "skewed" model best matches the real world. From an Aboriginal perspective this might be seen as drifting off to a specific realization, but from an anthropological perspective it might be seen better as completing the logic of the system, for the resulting skewed model is quite different from the flat one. The default option is to stop at generational closure, but since the average or expected F-M age difference (and therefore also the average H-W age difference) is almost never zero or negligibly small among Central Australian Aborigines, the default option almost never applies. So unless we and the Aborigines have a "flat" system before us, we and the Aborigines *must* go on to the second half of the equation and deal with age skewing or the model simply doesn't work in the real world. (Tjon Sie Fat probably told us how much age bias a flat system can accommodate in the real world before it "breaks" to become a skewed system, but I don't remember what he said.)

Since the same set of kinship terms can populate a flat system or one that is skewed, you are correct in saying that no special terms serve as definitive indicators of the double helix model.

As John Atkins noted, the age biased model actually has been around for a good while but has been ignored or maligned by people who either don't understand it or don't want to deal with its connections with the real world. The following excerpt concerns the Alyawarra and three other

language groups living at Warrabri Settlement on the northwestern corner of Alyawarra territory in the mid-1970s, several years after I completed my fieldwork:

> "As a student I had learnt of the division of Aboriginal society into two groups, that is, moieties, but I had been directed to the importance of patrimoieties in matters concerning land and the Law. My female instructors were anxious to clarify and broaden my understanding of the interconnections of the divisions of their society. At times they would stress their mother's line and membership of a matrimoiety. *At others they would speak of their siblings, cousins, grandparents and grandchildren as belonging to the same generation level.* In some ways my anthropological training was a hindrance and their attempts to clarify created confusion." (Bell, Diane. 1983, 1993; ***Daughters of the Dreaming***. Minneapolis: University of Minnesota Press; p.19; italics mine).

It's clear from the text and references that Bell was not familiar with the double helix kinship paper or spin-offs from it, or with Ursala **McConnel's** work with Wikmunkan kinship half a century ago. But the italicized sentence is a capsule summary of the defining features of an age biased Central Australian kinship system written by a person who had no particular interest in the topic but paid a lot of attention to what her informants told her.

****   I don't know how much you have dug around in the Archive Kinship folder, so I may be telling you things you already know here. The comments by John Atkins, including the citation for McConnel's work, appear in the Archive, in /C04 Kinship /K2 Double Helix paper /K2C Pro **- Tjon Sie Fat** et al / K2C-1 **Atkins** comments on More Complex....

> The special term for REAL MBD tends to act as a proscriptive category – don't
> marry here -- but that is consistent with the Aranda model, not particular to
> the double helix.

I can't deal with this item now – my schedule is not my own today – but I'll get back to you soon concerning REAL MBD.

Woody

From: "Douglas R. White" <drwhite@orion.oac.uci.edu>
To: <wdenham@ncia.net>
Date: Mon, 4 Feb 2002 08:25:46 -0800 (PST)
Subject: RE Drifting off

That's great. I think we have a problematic here on which to focus part of the article.

Doug White

* * * * * * * * * *

Omaha
From: "Douglas R. White" <drwhite@orion.oac.uci.edu>

To: Woodrow Denham <wdenham@ncia.net>
Date: Mon, 4 Feb 2002 10:45:56 -0800 (PST)

I think I have figured out the major behavioral discrepancy
from the double helix model occurs when male ego marriages a
classificatory mother who is terminologically relabeled by Omaha
terms - that is consistent with the {8,9} => 13 terminological
discrepances in Table 4 and what you say about them and it is
consistent with the network data.

Does that sound correct? Might these be marriages of a younger
man for whom potential spouses are scarce, and he might be given
a wife from WITHIN his lineage by some kind of lineage-solidarity
relatinging-alternate-generation-equation relabeling (OMAHA that
is) but the wife is actually a widow or older woman? THat would
explain almost everything about the terminological/behavioral
discrepancies.

Doug White

From: "Douglas R. White" <drwhite@orion.oac.uci.edu>
To: Woodrow Denham <wdenham@ncia.net>
Date: Mon, 4 Feb 2002 11:38:25 -0800 (PST)
Subject: correction

a bit more complicated but I was reading my diagrams wrong
before.

I think I have figured out the major behavioral discrepancy from
the double helix model occurs when male ego marriages a
classificatory FZD who is terminologically relabeled by Omaha
terms: you take D2{13,14} FaSiDa -> B1{17} Da which is consistent
with reciprocity of B1{17}Da with D1{8,9} Mo terms after
transformation. I.e, consistent with the terminological
discrepances in Table 4 and what you say about them, and
consistent with the network data. True FZD of course is very
rare, it is the classificatory FZD (non consanguineals mostly)
that are married. What is odd is why not just marry FZD outright
with no Omaha recoding? So there must be something that outlaws
this (although she is in the right section), something like the
implicit subsection rule, but the Omaha recoding gets around
that, recognizing as well that this exceptional case is a LINEAGE
daughter and not a marriage to be repeated.

(If so, these folks are certainly very circumspect about rules
and exceptions).

Does that sound correct? Might these be marriages of a younger
man for whom potential spouses are scarce, and he might be given
a wife from WITHIN his lineage by some kind of lineage-solidarity
relabeling (OMAHA that is) but the wife is actually a widow or
older woman? That would explain almost everything about the
terminological/behavioral discrepancies.

From: "Douglas R. White" <drwhite@orion.oac.uci.edu>
To: Woodrow Denham <wdenham@ncia.net>
Date: Mon, 4 Feb 2002 11:48:48 -0800 (PST)
Subject: correction again

....is a LINEAGE granddaughter...

i.e. child of a member of the lineage (lineage daughters of
daughters marry into)

I think this is another case of "the exceptions make the rule" ie
they try to AVOID FZD marriage so dont want ever to repeat it, so
relabel as "Da" consistent with an Omaha patrilineage solidarity
principle... but then it also keeps recurring as an exceptional
case in later generations, but doesnt get into the 'system' which
as helical model operates on MBD MMBDD principles which give the
age flexibility.

In fact it is probably the age flexibility of the MBD MMBDD etc
pfd marriages that is axiomatically related to the helical
skewing and the outlawing of FZD

Doug White

* * * * * * * * * *

REAL MBD and the OMAHA anomaly
From: <wdenham@ncia.net>
To: <drwhite@orion.oac.uci.edu>
Date: Saturday, 9 Feb 2002

Doug,

> The special term for REAL MBD tends to act as a proscriptive category – don't
> marry here -- but that is consistent with the Aranda model, not particular to

> the double helix.

> … lineage-solidarity relabeling (OMAHA that is)

Sorry it's taken me a while to get back to your questions. They go right to the heart of a lot of things, and I didn't want to address them until I had time to do it thoroughly.

I'm not sure which term you refer to above. Do you mean 15 adniadya which refers specifically and exclusively to one's proper MBS (*not* MBD)?

I suspect (but do not know) that the meaning of this term is approximately the opposite of what you suggest. I think ego applies it to the brother of a wife who is a REAL MBD, and in that sense it may mark a very frequent violation of the Aranda MMBDD (NOT = MBD) marriage preference.

I've copied the following with regard to FZS/MBS and FZD/MBD from the previous message so it's easy to work with here:

Table 1 says:

… 13 angeliya is used by both males and females to mean FZS/MBS (unmarked).
… 15 adniadya is used by both males and females to refer to MBS (unmarked). It refers specifically and exclusively to one's proper MBS, not to close or distant classificatory MBS.
… 14 algyeliya is used by both males and females to mean FZD/MBD (unmarked).

Table 2 says several things:

… In the EGO column, 13 angeliya is used by both males and females to refer to male ALTERS only (Table 1 says all speakers use it for FZS/MBS).
… In the ALTER column, 13 angeliya is used by male ALTERs when any EGO applies 13 angeliya to them; i.e., in this case, 13 angeliya is self-reciprocal.
… In the ALTER column, 14 algyeliya is used by male ALTERs when female EGOs apply 13 angeliya to them.

… In the EGO column, 15 adniadya is used by both males and females to refer to male ALTERS only (Table 1 says all speakers use it for MBS). This term is used specifically and exclusively for proper MBS, and does not apply to close or distant classificatory MBS.
… In the ALTER column, 13 angeliya is used by a male ALTER when a proper FZS applies 15 adniadya to him.
… In the ALTER column, 14 algyeliya is used by a male ALTER when a proper FZD applies 15 adniadya to him.

… In the EGO column, 14 algyeliya is used by both males and females to refer to female ALTERS only (Table 1 says all speakers use it for FZD/MBD).

… In the ALTER column, 13 angeliya is used by female ALTERs when any EGO applies 14 algyeliya to them EXCEPT when ego is a proper MBS in which case the proper reciprocal is 15 adniadya.
… In the ALTER column, 14 algyeliya is used by female ALTERs when female EGOs apply 14 algyeliya to them; i.e., in this case, 14 algyeliya is self-reciprocal.

So Tables 1+2 tell us which terms ego should use for MBS/FZS and MBD/FZD.

Tables 1+2 say the Alyawarra should use 14 algyeliya for both MBD and FZD but the statistics in **Table 6** say something quite different. This table shows the statistics for various terms that egos use for real MBD and real FZD as determined by computing 240,000 genealogical paths in the database.

Notice that the terms used for real FZD at the bottom of Table 6 show that 14 algyeliya is by far the most common term (77%), and the remaining 23% of kinterm applications examined here are scattered over 7 different terms – not exactly a random distribution, but nothing much emerges.

But look at what happens with Real MBD at the top of Table 6.

… 30% of the applications = 14 algyeliya (MBD in accordance with Tables 1+2) and 7.5% = 8 adardiya (MFZ, DD).   Both are in the right moiety and the right section. 14 algyeliya is in the right generation but 8 adardiya is in the wrong generation in the traditional Aranda model. However, if we think in terms of the helical model, both of these terms are located on the same generational spiral within the helix, so are in the same generation.

… 29.5% = 18 anowadya (W/MMBDD) and 8.7% = 22 andungiya (HZ/BW). Both are in the right moiety, the wrong section, and the right generation.

… 24% = 8 amaidya (M), who is in the right moiety, the wrong section and the wrong generation.

So nearly a third of the REAL MBD are referred to as MBD, nearly a third are referred to as W or MMBDD, and a quarter are referred to as M.

… The 30% of real MBD referred to as 14 algyeliya conform to the model.
… The 30% of real MBD referred to as 18 anowadya could also be MMBDD and thereby conform to the model, but that is not true. The "rules" say "marry MMBDD but not MBD", whereas 14/19 of the marriages we checked in preparing the double helix kinship paper were between ego and MBD (not MMBDD), 3/19 were to MMBDD (not MBD), and 2/19 were to FZD (not MBD/MMBDD).
… The 24% of real MBD referred to as 8 amaidya constitute the "Omaha" element.

So how does the "special" term for Real MBS fit in here? Unfortunately I'm not sure. When we did the computations for the paper, we had to be very selective – the computer was smart enough but was astonishingly slow and the database was immense. Standard practice was to write a program to do one tiny job and have the computer work on it all night; if anything went wrong,

we would fix it the next morning and run it again the next night, etc. So we did what we could to get a fix on the system as a whole, but sacrificed most of the details. To the best of my recollection we simply never tried to figure out exactly what 15 adniadya was all about.

My guess is that some reclassification of kin occurs both before and after a marriage.

If you are a shy youth who blushes even when you see the photo of 18 anowadya, you can reclassify her as 14 algyeliya and not be embarrassed.

Perhaps more importantly, if you marry a MBD but know that the rules say you should have married a MMBDD, you can reclassify your 14 algyeliya as your 18 anowadya and all is well. Sort of.

But if you marry a 14 algyeliya and reclassify her as 18 anowadya, must you reclassify her brothers and other close kin too? If so, is 15 adniadya the term you use to identify a real MBS who is the brother of your 14 algyeliya MBD who you married and now refer to as 18 anowadya W/MMBDD? If so, the special MBS term may be a "has married" marker, not a "don't marry" marker.

And why would a man marry MBD (presumably 14 algyeliya) and reclassify her as 8 amaidya? As you can see from Table 6 and elsewhere, this Omaha element is not a tiny little blip that appears now and then. Rather, it is a significant element that we simply were unable to explore in 1976-77. Your recent comments on ways to generate the Omaha MBSD = MBD = M pattern are plausible, but how can we test them?

I can speculate about all of these relationships but I don't have the technology required to investigate them systematically, computationally, definitively. Probably there are at least two ways to approach the problems. The elegant deductive approach is to propose as many plausible hypotheses as possible (as you have begun to do), test them rigorously and declare the one that survives all of the tests to be the winner. A much less elegant inductive approach is to use a lot of computational horsepower to search for multidimensional patterns in the genealogical, demographic and kinterm datasets, sift the patterns to find ever sharper patterns within them, etc., until the discovery procedure reveals something to which we can say "Aha!"

Although I'm sympathetic to the hypothesis testing approach and support it completely, I'm innately more comfortable when using the pattern detection approach.

I still haven't had any time to study your software. Does it work for both hypothesis testing and number crunching? If I learn how the software works, is it possible for me to use it via TELNET or some other interface from my current location? Or can I download a copy and run it on my machine?

It's 0100 here and I'm beginning to fall asleep at the keyboard. Again, I hope this is useful.

Woody

* * * * * * * * * *

MBD Marriage Table

From: "Douglas R. White" <drwhite@orion.oac.uci.edu>
To: Woodrow Denham <wdenham@ncia.net>
Date: Mon, 11 Feb 2002 16:34:28 -0800 (PST)

Hu/Wi USE OF TERMS WITH TRUE OR NEAR MBD MARRIAGE

```
---------------------------
H to W       W to H     HuId    WiId file22 file22
- - - - - - - - - - - - - - - - - - - - - - - - - -


W=MBD
  17 Da(3)      18 MFZDS    3      174     68       3
   0             0         27      359      0      22
   5 DaDa(0)    19 MMBS    27      188     78      22
   0             0         39      214      0      28
   0             0         42      203      0      31
   0             0         45      219     95       0


W=MFBSD
   0             0         15      176      0      15
   0             0         19      179      0      18
  16 Da(0)      13 MBS    19      180     70      18
  16 Da(1)       9 MB     26      173     67      21
   2 DaDa(1)     9 MB     26      196     85      21
   0             0         42      225      0      31


W=MhalfBD
   9 (36)        9 MBS   113      182     72      51
```

The numbers in parentheses are the frequencies in table 4
for reciprocals.

I don't understand the 9-9 reciprocity since one is female
but other than that it looks like we get Omaha-type
transformations when ego marries a MBD.

Make sense to you?

Doug White

* * * * * * * * * *

MBD Omaha table

From: <wdenham@ncia.net>
To: <drwhite@orion.oac.uci.edu>
Date: Sat, 16 Feb 2002

One of the major problems I have had in thinking about the Alyawarra data over the years derives directly from the limited computer power we had at Berkeley in 1976-77. I seem to recall that the SOCSIM program had to run for about a week to detect the 240,000 non-redundant genealogical paths connecting everybody to everybody else by every detectable route. It did its calculations on all pairs of people regardless of whether either or both members of the pairs thus connected had contributed kinship terms to File22, so we presume that it caught everything.

But in preparing the double helix paper we had to sample that huge universe. For example (p.15): "With regard to marriage with MMBDD, the data have been checked only in those cases where one or both of the spouses contributed a set of terms to the kinship data file, that is, forty-two of the 114 known marriages. In nineteen of those cases, husband and wife are related consanguineally." This procedure gave us a tightly focused and more manageable file that we could use to investigate relations between genealogies and kinterms, but I have always been concerned that it may have given us a warped view of the universe as a whole and I don't know how it may be warped.

As you delve deeper into the intricacies of the data, I would feel less adrift if we had some "master" tables that showed the universe as a whole. Subsidiary tables then would show various subsets of the universe based on the availability of one or both kinterms in File22. Comprehensive tabulations might not tell us anymore about the specifics of kinterm usage, but they would tell us considerably more about the universe to which the terms apply.

For example, one of the criticisms that can be aimed at working directly from the genealogies is that traditional research into Australian kinship has tended to emphasize the importance of marrying CLASSIFICATORY kin who are NOT consanguineal kin. CLOSE classificatory kin lie within the genealogies, but DISTANT classificatory kin by definition do not, so if the Alyawarra married distant classificatory kin the people in question would lie outside the genealogies and our approach wouldn't apply. But the Alyawarra data show that 19/42 of the Hu/Wi pairs who contributed kinterms to File22 are related consanguineally. That's 45%, which doesn't tally with the traditional insistence on distant classificatory kin. But if the percentage is significantly different from that for the whole population of 114 known marriages, I think we need to know it.

If I knew that the people from whom I elicited kinterms were a truly representative sample of the population, I wouldn't be so concerned, but the only way I could have insured their representativenss was to analyze the data in the field, and I couldn't do that in 1971-72.

What I am proposing is a large job and as a number-cruncher I suspect it would be valuable, but I leave it to you to decide whether it is worth the effort.

* * * * * * * * * *

Scheffler's 1982 article

From: <wdenham@ncia.net>
To: <drwhite@orion.oac.uci.edu>
Date: Saturday, 16 Feb 2002

Doug,

> This last logic is implicated in reconfiguring kinship relations
> and in violating another common modeling axiom, that of
> uniform reciprocity of kinship terms.

The new abstract (especially this line from the longer version of it) could be seen as a direct rebuttal to Harold Scheffler's (1982) arguments in the article he wrote in response to the double helix kinship paper. Perhaps you have read it recently, but if not this would be a good time for a quick review. It appears in the Archive at C04 Kinship / K2 Double helix paper / K2B-4a Scheffler article.

- **Harold W. Scheffler**, Theory and Method in Social Anthropology: On the Structures of Systems of Kin Classification; *American Ethnologist*, 9:167-184; February 1982

I certainly don't want "Three Logics of Alyawarra Kinship" to focus primarily on Scheffler's paper, but his advocacy of the traditional normative approach, derived from Tax's (1937) statement of the norms, combined with his opposition to considering alternatives and his creative misunderstanding of the double helix paper, might make his arguments serve a useful purpose here. His voice is/was a loud one among students of Australian Aboriginal kinship, so with regard to that specific "audience" his views are important both scientifically and politically.

Woody

* * * * * * * * * *

Technical writing

From: <wdenham@ncia.net>
To: <drwhite@orion.oac.uci.edu>
Date: Saturday, 16 Feb 2002

Doug,

One of the fringe benefits of my new faculty position is access to academic databases from which I have been barred in the past. I've just been reading Gulliver's review of *Kinship, Networks, and Exchange* and would like to comment on some of his/her comments which I quote here:

> "… network analysis did virtually vanish. Its limitations seemed too frustrating. It required highly detailed field data that all too many anthropologists did not have. It looked as if it were restricted in its application to only small populations: to extend beyond that required knowledge of mathematics that the large majority of anthropologists did not possess. … It is not always an easy book to read because of the marked technical nature in parts of most of the essays. Unfortunately, the editors and contributors do not explain some of their key concepts and methods sufficiently, probably assuming that these have been well discussed elsewhere and are available to interested scholars. For example, do most anthropologists understand …"

In the 60s, 70s and early 80s, I was turned off by a great deal that was going on in the formal analysis of kinship even though I knew enough about it to generate the highly detailed Alyawarra data that the approach required, to work closely with John Atkins on its analysis, and to appreciate Tjon Sie Fat's extension of that work. But I was more interested in Aboriginal Australia, more interested in field research methods, more interested in breadth than in depth. So I never quite found the time and energy I perhaps should have devoted to developing the arcane skills required to engage fully in the analytical undertaking.

I believe it is true that the Australian Aboriginal specialists who stood to gain a good bit from the double helix paper and Tjon Sie Fat's extension of it looked at them briefly, said "I don't understand that," and kept doing exactly what they had been doing for a century or so. I am certain that Harold Scheffler read the double helix paper very carefully and thought he understood it, but in fact missed the point. And some who failed to understand formal kinship analyses used their own deficiencies as the bases for anti-intellectual jokes intended to poke fun at "eggheads", which seems most peculiar among Ph.D.s.

Since I haven't yet seen *Kinship, Networks, and Exchange*, I can't comment on any of the articles in it, but Gulliver's review suggests that they too present problems of access for people who may not be among the initiated few.

All of which brings me to my point here:

There are not many intellectual merits associated with writing thousands of pages of computer documentation as I have done, much of which has been aimed at blue-haired ladies who work in Town Clerks' offices in tiny villages all over New England. But there is one important merit: I have learned how to write very clear explanations of highly complex materials and operations. If I understand something well enough to write one of my precise, step-by-step jargon-free explanations of it, just about anybody who speaks English can understand it.

I probably will never have the esoteric technical skills required to perform some of the exciting analytical work to which the Alyawarra data lends itself. But if I can understand the analyses well enough to write about them effectively, it will never again be possible for people with Ph.D. degrees to claim that they simply can't understand them. They may reject them, they may feel terribly uncomfortable when they see the world through a new lens, but they will NOT be able to claim, with a straight face, that they just don't understand.

I hope this skill will be useful in preparing "Three Logics of Alyawarra Kinship", and in the larger effort to help revitalize the study of networks, kinship and exchange.

Woody

From: "Douglas R. White" <drwhite@orion.oac.uci.edu>
To: wdenham@ncia.net
Date: Sat, 16 Feb 2002 09:07:41 -0800 (PST)
Subject: Re: Technical writing

Yes, we ought to make a very good team. Michael Houseman and I have collaborated on a similar theme, my writing too dense but great ideas and analyses, his writing and rewritings on our common work have engaged the audiences in France. So much so that much of our work was accepted into the "canon" of French anthropology in issue 154-5 of L'Homme dedicated to kinship, where the kinship work gets rave reviews.

But I haven't cracked the Anglo world of anthropology, which is where Gulliver's review is dead on. One reason why I wanted to start web publication of the longitudinal field sites with your databases is in fact that you are such a clear writer. I have our Institutional Review Board staff person looking into what the guidelines are on publishing databases for us. I seem to need Acrobat 5.0 to convert your word documents into PDF with embedded html links between files, and haven't tested it yet to see if it does indeed to that. So that should come together in the next few weeks.

In the meantime, given that we have some time, I think we will have great fun with your outstanding Alyawarra data and the problems it poses.

Doug White

* * * * * * * * * *

Preliminary draft
From: "Douglas R. White" <drwhite@orion.oac.uci.edu>
To: <wdenham@ncia.net>
Date: Fri, 22 Feb 2002 10:33:02 -0800 (PST)

1. The tetradic model: patrimoieties, alternate generation
moieties

The basic idea of the triadic model is that of patrimoieties,
with alternate generation endogamous moieties. When the world is
divided up this way four "sections" are defined, and two of the
sections implicitly form an exogamous matrimoiety as opposed to
the other two. The (implicit) exogamous matrimoieties are not
necessarily descent groups, they are not localized, and they need
not be named. It is sufficient that the sections be named as

social categories, but they are also not descent groups. The patrimoieties are often localized, and often named, and if so, reckoned by descent. Sections, however, break the descent lines into two, alternating across generations in the patriline. Female descent counts, but it does not define groups. The elements of this model are:

A. None of the marriages need be with actual consanguineal kin. The rules simply specify classificatory categories that are inherited. Female descent counts, but it does not define groups. There are no corporate matrilineal groups, nor are matrimoieties, either exogamous or endogamous, corporate groups; they are merely lines of reckoning that are used in computing sections, and a necessarily implicitly in the tetradic system.
B. Males in one generation, exchanging women with the opposing patrimoiety, no not compete for mates with their fathers or sons. This allows older men to seek young women as brides without competing for women with their sons. The father's wives will come from implicit exogamous matrimoiety A and the son's wives from B.

C. While most wives will come from a man's own "generation," categorically speaking, those few old men who live sufficiently long to have potential wives in the "second descending generation" are permitted to marry them since they are the appropriate matrimoiety. These women must also be in the appropriate patrimoiety, of course, to be marriageable,

2. The Alyawarra follow the prescriptions of the tetradic model in nearly 100% of all marriages. The patrimoieties and the four sections are named. There are no named matrimoieties, endogamous or exogamous, although there are necessarily the implicit matrimoieties formed by the sections.

A. Most of the marriages are not with consanguineal kin.
B. Older men do take young women as brides. The partition between categories from which father's wives and son's wives are taken is absolute (no exceptions)
C. Some older men do have second or third wives taken from "second descending generation," categorically speaking, and they are always of the appropriate section (patrimoiety and implicit matrimoiety). In a few cases, they are consanguineally related females.

Doug White

 * * * * *

Doug,

My first reaction that it looks good and all is well EXCEPT for the line:

> The patrimoieties and the four sections are named.

Patrimoieties are NOT named. Patrilineages (countries) are named as are sections, but both matrimoieties AND patrimoieties are unnamed (see p.2, top line, in the double helix paper).

It's 11 pm here and I'm about to go to sleep. More tomorrow.

Woody

* * * * * * * * * *

MBD Omaha table with red flag
From: <wdenham@ncia.net>
To: <drwhite@orion.oac.uci.edu>
Date: Monday, 18 Feb 2002

Doug,

I'm becoming increasingly frustrated in my attempts to deal with the simple little MBD Table that you sent me. I'm having a terrible time checking it manually and visually.

File22 is by far the most difficult file to manage manually because of the very long records and the tendency of the kinship term codes to merge into an astigmatic haze when examined visually. In the past I've tried to separate the columns and label them in various ways. That makes the individual fields easier to read, but also it makes the records a great deal longer and harder to manage. The astigmatic haze remains, and I'm not happy with it.

The MBD Table you sent seems to present the results of examining a small sample of the married pairs shown in File01, but it is large enough to raise a red flag.

Specifically, the table includes the following rows:

```
 5 DaDa(0)   19 MMBS    27     188     78     22
16 Da(0)     13 MBS     19     180     70     18
```

If I understand this correctly, the first row says:
- File01: ID# 27 - 188 are spouses.
- File22: Terms applied to ID# 27 appear in KT column 22, and terms applied to ID# 188 appear in KT column 78.
- File22: ID# 27 - 188 refer to each other with KT# 5 – 19 (in KT columns 78 and 22, respectively).

- Table4: The number in parentheses (0) means that no instances of the 5 -19 pairing are reported in Table4.

To check the first row, I did the following:
- First I manually checked File01 and confirmed that ID# 27 and 188 are spouses.
- Next I manually checked File22 and confirmed that KT column 22 corresponds to ID# 27 and KT column 78 corresponds to ID# 188.
- Next I manually checked File22 for the term that 27 applies to 188 and the term that 188 applies to 27. That is NOT easy to do, but eventually I found the same terms you found, even though my manual/visual check may have led me to the wrong cells in the data table.
- Finally I looked at Table 4, KT# 5 - 19, and confirmed that it shows no instances of this pairing.

Is this approximately the same algorithm that your program used?

> NOTE: Both the algorithm I used, and the one Doug used, were wrong. In File22, the rows contain the terms used by EGO, while the columns contain the terms applied to ALTER. To see what EGO27 called ALTER188, look at the intersection of row 22 (for EGO#027) and column 152 (for ALTER#188). That cell contains KT#18 (anowadya = spouse). Nevertheless, my spotting an error – even if it was the wrong one - led Doug to recompute and all was OK.

The same logic applies to the second row ID# 19 – 180.

The red flag is: The frequency counts in Table 4, KT# 5 - 19 and KT# 16 - 13, both show "0" when you and I found "1". Not good.

Possible explanations seem to be:
- The 1976 program that generated the distribution in Table 4 missed something.
- The current version of the data table in File22 is not identical with the data we used in 1976.

A difference of 1 is not a big deal, but if it indicates that the calculations in 1976 were incorrect or that File22 has somehow been corrupted, we need to know that ASAP.

I can think of three possible approaches to investigating this problem:

- Use your program that generated the MBD Table, modified as needed, to perform the same search on the OLD version of File22 and see if you get the same results.
- Recalculate Table 4 from scratch and compare the old and new versions of it.
- Do a cell by cell comparison of the old and new versions of File22.

The oldest version of the kinterm data that is immediately accessible is in the Archive at / AA02 Numerical Data / ND1 Packed (old) / File22. The data started off as field records, then migrated to punched cards and on through the generations to tapes, to 5.25" and 3.5" diskettes, now to CD and to your server, so it is several generations removed from the original in that sense, but I have never intentionally changed the content or internal format of it. Then in 2001, I made a copy of /

ND1 Packed (old) / File22 from which I prepared the current reformatted version / ND3 Expanded (new) / File22ue that you are analyzing now.

Although the format of the old version is even more difficult to handle than that of the new version, the data in it should be identical with what we used in 1976, and identical with the data in the reformatted version (File22ue) that you are using now. If all else fails, we can go to the original data tapes that are in New Hampshire, still alive and well I hope (but reading them may be a problem since the technology has changed a lot since 1976), or all the way back to the cards on which I recorded the data in the field, which were in fine condition the last time I looked at them in July 2001.

I understand that this response doesn't deal with MBD and the Omaha question, but if we have a problem with the data, we're certain to have problems with their interpretation. Data quality control is an enormous problem when dealing with something like the Alyawarra and GCBS data bases, and I am certain it is one that will never simply vanish.

If I have misinterpreted something here, please set me straight.

Woody

* * * * * * * * * *

MBD Omaha table in EXCEL
From: <wdenham@ncia.net>
To: <drwhite@orion.oac.uci.edu>
Date: 28 Feb 2002

Doug,

> I also successfully replicated **Table 4** and compared the
> data to the OLD version (perfect match): the sample term I sent
> is now corrected to ALL RECIPROCAL 18 - 18, so we are on the
> track now. Thanks for your suggestions is tracing the errors.
> attached is the new table 4- quite close to the original

Glad to hear all is well. I've been especially concerned about the data - glad the suggestions worked. I haven't had time to look at the new table yet, but will try do it soon.

Woody

```
10   29
11   75  15
12  314 376  11
 1    0   2   2 103
 2    5   4   8  10 119
 3    2   6   3   2 214   0
 6    0   1   0   0   0   0   4
 7    0   0   1   1   0   0   4   5
16    1   2   0   3   2   0 482 422   4
19    2   1   1   0   0   0   4   2  11 267
23    0   5   0   0   0   0   0   6   5   0  86
13    2   1   0   0   0   0   1   0   0   0   0  42
15    0   0   0   0   0   0   0   0   0   0   0  25   0
14    0   0   1   0   0   0   0   0   0   2   1  76  10  65
 5    0   0   0   0   1   0   3   2   1   0   0   4   1  19 216
18    0   0   0   0   0   0   0   0   1   0   0  34   3  11   2 129
21    0   0   1   0   0   0   1   0   0   2   0  12   0   0   5   5 114
22    0   1   0   0   0   0   0   0   0   0   3   0   0  38   0   0   0  32
 4    0   0   1   0   0   3   0   2   1   2   0   8   1  13  15  62   9  25 113
 8    0   0   1   0   1   0   0   0   0   1   0  33   1  71   3   3   1  10   5   9
 9    0   0   4   0   1   1   0   0   1   3   0  19   2  68   0   6   2   1   5  55  37
17    2   0   2   2   4   0   1   2   2   2   0   0   0   6   3   3   0   0   1 613 550  28
20    0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0  12   1   0
     10  11  12   1   2   3   6   7  16  19  23  13  15  14   5  18  21  22   4   8   9  17  20
```

Doug,

I just imported the new **Table 4 data into Excel** so its easier to read and manipulate, and have attached a copy for you here.

I think it's quite amazing that the differences between your version of the table and the version that appeared in the double helix article are so tiny. Since that file is OK, I'm confident that the rest of them are, too. All of the others contain enough redundancy so maintaining quality control is feasible, but not File22.

Woody

* * * * * * * * * *

The Dreamtime
From: wdenham@ncia.net
To: drwhite@orion.oac.uci.edu
Date: 8 March 2002

Dear Doug,

Many of my attempts to deal with the Alyawarra focus closely on the data, but now and then it is important for me to back away from the data and try to see a bigger picture, whatever it may be.

The attached document is one such attempt [Dreaming, Singing, Teaching]. In it I present my evolving views on the nature of the Dreamtime. These views are still under development but

they contain a number of elements that may have some bearing on your own analysis of the Alyawarra data.

If you have time to read the whole thing, I think it would be useful for you to do so . . . But if you're too busy to do that now, I suggest that you go directly to the part entitled "Generations" on pages 33-36, specifically to the middle of page 34, to the line in red that says: "I began this discussion of generations ….".   Then continue to the end of that part on page 36.

In your first letter to me you said: "I also have a superb coding of the Rose Groote Eylandt network that you will be interested in and I have worked at." I need to know what you found there, and am eager to know whether you find the same patters in your own coding of Rose's data that you find in my coding of the same data in the GCBS Data Base (AU05 Wanindiljaugwa 1941). Furthermore, I need to know whether you found the same kind of "sided with a twist" patterns in Rose's data that you found in the Alyawarra data. As you read the last paragraph on page 35, you'll see why I ask. It goes far beyond the Alyawarra case alone.

I look forward to hearing your views on what I'm trying to do in this paper.

Regards,

Woody Denham

Generations.   How are connections between eternal Dreamings and ephemeral humans passed down through the generations?

I'm not qualified to say much about this topic from the traditional perspective taken by Western writers on the subject.   A good many births and deaths occurred in the Alyawarra camps where I lived, and I spent a lot of time dealing with Alyawarra ways of responding immediately to the events, the impacts the events had on the sizes and compositions of the camps, changes in the physical distribution of people in and among the camps and so on. But I didn't talk with them about either the biology or the metaphysics of birth and death for that was not among the topics I went there to study, and it simply didn't arise spontaneously. Furthermore, while deaths of several senior people occurred near the end of my period in the field, I left before the funerals were held.

My limited understanding of the surface manifestation of these topics suggests that the Alyawarra espouse something akin to reincarnation or the transmigration of souls, resembling concepts that are found in several religions. Although the Alyawarra in 1971 knew exactly where babies came from in a biological sense that aspect of the issue was of no great interest to them. Like some fundamentalist Christians who say that all babies come from God, the Alyawarra were deeply interested in the spiritual component of conception which was related to the esoteric world of the Dreamings, but a lot less interested in the mundane act of copulating in the bush. Within limits, if a baby's Dreamings were correct through its mother and its (sociological) father, then the precise identity of its biological father could be of some interest to the mother but was inconsequential in the larger scheme of things. This doesn't mean that the Alyawarra were ignorant or neglectful of the role of sexual intercourse in making babies, or that

they were sexually promiscuous; rather, it means that they were marching to a radically different drummer and couldn't be bothered with the self-evident trivia.

I began this discussion of generations as if I knew what generations were, but in fact the concept of generation is problematic. In the Western worldview, grandparents, parents, siblings, children and grandchildren occupy separate and discrete generations that can be described metaphorically as links in a linear chain stretching from one end of time to the other. And that is the form that descriptions of Aboriginal generations have taken in the works of Western writers who have imposed their own worldview on the Aborigines.

This situation appears clearly and simply in Western models of Central Australian kinship, marriage and descent that incorporate moieties and sections. Such models show patrilineages in each society segregated into two side-by-side halves called moieties. One moiety minimally contains a man and his patrilineal ancestors and descendents (FF, F, EGO, S, SS, etc.) while the other contains the women whom those men are permitted to marry (e.g., father's wife, own wife, son's wife, etc). Each moiety is divided into segments, one above the other, called sections. Within a moiety, one section (call it A) contains a man and his siblings in what may be called Generation 0. The section "above" (call it B) contains his father and fathers siblings in what may be called Generation +1, while the section below (also called B) contains his own children in what may be called Generation -1. This "alternating generation" pattern (A-B-A-B-A) applies to the other moiety as well (C-D-C-D-C), and can be extended "upward" and "downward" to more remote generations. The number of discrete generations, as conceived here from a Western perspective, can increase indefinitely with the same pair of section names alternating as we move from one generation to the next within each moiety.

But the Alyawarra live in a radically different universe, one that contains only two generations: "own" and "other". Diane Bell (1993:19), speaking of the Alyawarra at Warrabri Settlement, says it succinctly: "At … times they … speak of their siblings, cousins, grandparents and grandchildren as belonging to the same generation level." Similarly their parents and their own children belong to the other generation level. This is not an endless series of discrete generations whose names alternate, but rather it is just two generations. That is what the Aborigines say: two generations. They are the experts on their system. Why not believe them?

Because of people's relations to their dreamings and countries, their rules about who can and cannot marry whom, and the fact that men on average are significantly older than their wives, the two generations do not simply stretch out beside each other as a pair of parallel lines. Rather it is better to think of them as coiling around each other to form a spiral, the two halves of which are tied to each other by every birth that occurs in both generations.

The proper metaphor here is not "links in a chain" but rather is a "double helix" in some ways analogous to the model of DNA introduced by Francis Crick and James Watson's (1953) "Molecular structure of nucleic acids*",* popularized in Watson's (1968) *The Double Helix*, and serving now as the basis for the Genome Project.

A physical representation of this linked spiral in two or three dimensions suggests that it stretches through time from past to future, but that is an ethnocentric view of a local

31

phenomenon, analogous to seeing beads on a string while standing too close to see that the string forms a loop. Rather births tie the two generations together over and over as they spiral through the universe, not changing step-like through time as Western generations do, but rather remaining fixed, unchanging, eternal, for such is the nature of the Dreamtime.

By manipulating age differences between husbands and wives and the number of lineage groups in a society, Tjon Sie Fat (1983) demonstrated that the direction in which the helix is inclined, its degree of inclination and the number of generational spirals within it can be changed. So the helical structure can accommodate a variable number of eternal generations and the tightness of the spirals can increase and decrease.

I know that the helical model works with the Alyawarra speaking people at MacDonald Downs and Derry Downs Stations in 1971-72. I am confident that Bell caught a glimpse of it but failed to understand it with the Alyawarra at Warrabri Settlement in 1976. Ursula McConnell saw it with the Wikmungkan in Cape York Peninsula in the 1930s but her work was dismissed by established anthropologists who failed to understand it. I suspect that a careful analysis of F.G.G. Rose's data from Groote Eylandt off the Arnhem Land coast in 1941 will reveal a helical pattern similar to that which emerges from the Alyawarra data. Perhaps my attempt to comprehend Australian Aboriginal cognitive structures differently asks too much of such a small sample of data. But I must begin somewhere, and that's all I have.

Stephen Toulmin (1953:118), in a discussion of historical changes required to replace Aristotelian with Newtonian dynamics, said:

> ",,,, it was easy enough to recognize as complex something previously accepted as simple, but the reverse change was a bitterly hard one to make."

Such is the kind of change proposed here. Initially the helical model of two generations spiraling eternally through the Dreamtime appears to be more complex that the traditional Western model of discrete generations in a linear universe, but the problem is its novelty, not its complexity. In fact it is a great simplification.

The Dreamtime-centered cognitive universe of the Alyawarra and their congeners in Central Australia is indeed complex. But the remarkably flexible helical model renders part of the structure of that alien universe more intelligible than it has been heretofore in part by eliminating the needless complexity and intricacy of traditional anthropological models. Just as fully developed Aristotelian models of the Universe contained vast numbers of perfect circles designed to "save the appearances", so too do traditional models of Central Australian kinship, marriage and descent contain endless tinkering designed to make Aboriginal realities conform to incompatible Western assumptions.

Understanding the technical details of the helical structure of Central Australia kinship and its connections with moieties, sections and subsections lies far beyond the scope of this essay. Please see the following works for a fuller . . . . .

Subject: Re: The Dreamtime

From: "Douglas R. White" <drwhite@orion.oac.uci.edu>
To: wdenham@ncia.net
Date: Thu, 7 Mar 2002 13:18:34 -0800 (PST)

Yes, that should be very helpful. I've been thinking of the
dreamtime too. Possibly, if dead ancestors should not be named,
this gives the kind of flexibility to the system I am looking
for, i.e., how the system specifies itself by marriage choices
that are influenced by age-specific demography into one of the
helical models; but then the system should by the same token be
able to hold an intermediate position between two helical models
or shift between them.

My friend Peter Bearman published "Generalized Exchange."
American Journal of Sociology. 102.5:1383-1415, 1997 in the
Groote Eylande, based on a smaller dataset that the one I
developed. The idea of helical models did not occur to him.
I enclose his abstract.

I did not complete my analysis beyond simple sidedness, but I was
on track of something like I did with your dataset to identify
the helical model.

I agree that it would be of very general importance to complete
the analysis.

Doug White

* * * * * * *

Terms of Reference or Address?
From: wdenham@ncia.net
To: drwhite@orion.oac.uci.edu
Date: 27 Dec 2002

> When you discuss the Omaha terms you elicited, would you call them terms of
> reference rather than terms of address? Would your informants have thought about
> what they call others (address?) or how they would refer to them in the 3rd person
> speaking to others (reference?).

They are REFERENCE terms in the contexts of
a) kinterm elicitations
b) abstract discussions of relationships among participants in events such as initiations
c) discussions of relations between people and the sacred stones who were classified as Father,
FaFa, etc.

I rarely heard kinterms used as ADDRESS terms or as REFERENCE terms in ordinary speech.

REFERENCE terms ordinarily were section terms (Burla, Ngwariya, etc.) with appropriate modifiers. To refer to Jim Austin, you say "that old Burla" and point your chin in the direction of his body, residence, country, photo, whatever... highly context dependent. Or you might use his Country membership in much the same way especially for groups (i.e., plural reference) "those arungharindya" means "those members of Arungha country", or "those alugera-arindya" for the women and children who live at one of the single women's residences.

ADDRESS terms were similar. To call Jim from across the ngundya, you look in his direction and shout "Hey you Burla". Two or three Burla men might look up, but since its clear who you're looking at, the ones who are irrelevant go on about their business and old Jim responds.

Also sex-age category terms were used a lot again mainly in the plural: "hey you ardwa elgwa" to call a group of old men - again context dependent. Or "these ardwa andidja (young men) want a ride to the bore" and point to them.

I think the kinship terms I recorded constitute a "technical vocabulary" of reference terms used mainly in discussions where context is not sufficient, where you must have absolute identifications that are precise and unambiguous.

Woody