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ABORIGINAL MEN COMING OF AGE IN CENTRAL AUSTRALIA

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Aboriginal Men Coming of Age in Central Australia

WOODROW W. DENHAM, PH. D.

***Abstract.** This is a quantitative analysis of the replication of Dreamtime traditions among the Alyawarra of Central Australia in 1971-72. A narrative summary presents observational data recorded during the enactment of a 108-hours long tone poem that embodied oral traditions, songs, dances and visual arts as aides-mémoire that facilitated the synthesis and persistence of a reliable society comprised of unreliable people. The tone poem, presented by 69 men and women, marked the beginning of one young man's lifelong education in the all-encompassing Aboriginal Dreamtime. A tabular summary follows the narrative summary and describes demographic, genealogical, kinship and other quantified relations that were embedded in the narrative and that young men were required to learn before they could marry and sire children. The paper ends with a discussion of the two summaries that together shaped the education of young Aboriginal men. Instantaneous scan sampling and unsupervised pattern detection formed a reductionist research strategy for finding points of entry into an otherwise impenetrably complex alien civilization in which male circumcision was a major feature. The paper does not pretend to be an exercise in explanation, but it has major implications for identifying what needs to be explained. When observations and descriptions are problematic, formulating testable theories of human behavior is doomed from the outset.*

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1. *Introduction*¹

Problems.

This coming of age story occurred among Aboriginal people of Central Australia whose childhoods have been under-reported for more than two centuries. Among Alyawarra males in 1971-72, coming of age was strikingly different in several ways from analogous activities in 20th century Western English-speaking societies. In researching and writing this paper, I inevitably faced two sides of the matter: how to comprehend what I saw, and how to express it. The paper addresses both.

Specifically, I analyze demographic, genealogical, kinship and other kinds of relational data among 69 people who participated in activities associated with a series of eight circumcisions. I focus on a dozen substantive and methodological issues among many possible options, always using my prior studies of Alyawarra kinship to better understand important aspects of Alyawarra society and culture that I have not addressed in earlier publications.

Substantive problems include: ALLOPARENTING² of younger children and COMMUNAL MENTORING of adolescent males, wherein care of the young was provided by most or all members of certain sex, age and kinship categories rather than by parents alone; DREAMINGS or primeval ancestors rooted in the ancient Aboriginal DREAMTIME, the “far distant past with which the earliest traditions ... deal” (Spencer and Gillen 1899:73fn1), heretofore classified as “primitive religion”; COUNTRIES as geographical resource areas and sociological descent groups that were responsible for sustaining the Dreamings in perpetuity; CIRCUMCISION and life cycle events associated with it; KINSHIP and other relational systems that constituted frameworks for social interactions; and the educational process that the Alyawarra used to integrate these and related concepts thereby making a boy into a man.

Methodological problems include: redundancy, complexity and simplicity within and between the domains of Dreamtime and kinship defined very broadly; unintended biases intrinsic to Western cultures and the English language that have obscured Aboriginal social behavior from Western analysts for so long; REDUCTIONISM, the “search strategy employed to find points of

¹ This is the sixth in a series of articles on Alyawarra kinship that I have published in *Mathematical Anthropology and Cultural Theory*. These articles are related to each other, but I have published all of them (including this one) as freestanding entities, so redundancies among them are deliberate, inevitable and extensive, especially in portions of Part 3. For additional information concerning topics that are summarized below, please see my previous *MACT* articles (Denham 2011, 2012, 2013, 2014, 2015, 2016a) and my other papers listed in the References, especially Denham, McDaniel and Atkins (1979) and Denham and White (2005).

² See the Glossary for definitions and connotations of terms initially printed in SMALL CAPS.

entry into otherwise impenetrably complex systems” (Wilson 1975) such as alien civilizations; and personal limitations that I carried to the research with me.

This paper deals primarily with the REPLICATION of traditions among Alyawarra men, emphasizing the processes by which precise reenactment of events that occurred in the Dreamtime sustained the universe in perpetuity. But I stress the importance of replication among Alyawarra women as well. Their knowledge and skills were demonstrated consistently in the narrative summary from 1971, and continued in a different form years later with their artistic and financial success in the Eastern Desert Art tradition, represented worldwide by retail sales and museum collections.³ As a male I had restricted access to their activities.

Research concerning Aboriginal circumcision and history often has treated the matters addressed here as benighted products of religious or spiritual misunderstandings. This paper adopts a different approach. It focuses on the logistics, management, coordination, scheduling, social relations and intricately detailed choreography of highly complex educational processes that incorporated training analogous to that offered at Western universities.

Part 1 contains a quick summary of the research context and methods of the Alyawarra project. It briefly summarizes my recent paper on child carrying as an introduction to alloparenting, and provides background information concerning Parts 2 and 3. Part 2, the narrative summary entitled MAKE HIM A MAN (*MHAM*), presents a detailed prose account of communal mentoring recorded using INSTANTANEOUS SCAN SAMPLING over a period of 185 days that encompassed eight circumcisions and social events associated with them. Part 3 uses nontraditional UNSUPERVISED PATTERN DETECTION methods to search for and describe relational and behavioral patterns in the prose narrative. Part 4 discusses the findings in Parts 2 and 3.

From a different perspective, Part 2 focuses on artistic traditions that gave substance to the cognitive world of the Dreamtime, while Part 3 focuses on relational traditions that shaped Alyawarra society as a physical instantiation of the Dreamtime. Colloquially speaking, I suggest that they are two inseparable sides of the same coin.

I assume that large-scale objectives of the scientific method are to observe, describe, predict and possibly control selected elements of the universe around us. This paper begins at the beginning: it concentrates on problems of observation (how to see it) and description (how to say it). It does not pretend to be an exercise in explanation, prediction or retrodiction, but it has major implications for identifying the events and relationships that explanatory models might address.

³ Sonja Chalmers, Eastern Desert Art, Alice Springs, N.T., Australia <https://www.easterndesertart.com.au/>.

My argument is simple: When observations and descriptions are defective, formulating a testable science of human behavior is doomed from the outset.

Context.

Figure 1.1 is a brief visual introduction to the setting and people of the Alyawarra project. The photographs are described in the text.



Figure 1.1. A brief visual introduction to daily life among the research population. It includes selected images of Dreaming, singing and teaching to which public access was permitted; slide numbers included.

a. Flash flood	b. Alugera	c. Alugera	d. Cooking kangaroo
e. Making fire	f. Agailba dance S340	g. Painting shields S322	h. Completed shield designs S328
j. Eagles S301	k. Women dancers S369		l. Approaching a Dreaming site S381

I conducted fieldwork with the southern Alyawarra living in the sand-hills of the Sandover-Bunday River Basin in Australia's Northern Territory, about 260 km northeast of Alice Springs. Alyawarra territory received a mean rainfall of 25 cm per year characterized by extended droughts and unpredictable floods associated with high frequency cycles of El Niño (dry) and La Niña (wet) periods, as well as with very low frequency climatic cycles marked by the onset and termination of Pleistocene cooling and global warming.

Despite a capricious and harsh environment, the habitat in recent centuries was rich and wet enough on average to support a small cluster of widely scattered nomadic Arandic-language societies of which the Alyawarra were only one. All of these Aboriginal people subsisted by hunting mammals, reptiles, birds and insects; collecting seeds, berries, tubers and other plant foods; and finding water in waterholes, springs and soakages in dry riverbeds

British colonization of Central Australia began in the 19th century, but extensive homesteading of southern Alyawarra territory occurred somewhat later, in the 1920s. As I have described in detail elsewhere (see fn.1 above), the Chalmers family who homesteaded MacDonald Downs Station where I conducted my fieldwork were benign in their treatment of the Alyawarra, and for half a century served as an invaluable buffer between the Alyawarra and much more hostile colonists elsewhere in Central Australia. Prior to the onset of the Land Rights Movement in the mid-1970s, the Alyawarra maintained far more of their traditional lifestyle at MacDonald Downs than did Aboriginal people living concurrently on government settlements, Christian missions, exploitative cattle stations, and in towns like Alice Springs.

Hunting for meat and foraging for vegetables in the 1970s continued to yield large quantities of the basic components of the traditional Alyawarra diet. Those preferred foods were supplemented by government subsidized rations of flour, sugar and tea, and by further provisioning of fruits by the Chalmers family who also taught some of them to speak English. A reliable water supply came from the same wind powered pumps that sustained the white Australian population and economy. Thus the research population was partially provisioned but was by no means dependent on alien foods as they would have been elsewhere in the Northern Territory at that time.

Access restrictions.

My observations indicated that access restrictions (my terms) concerning activities described below were not simplistic as they have sometimes been depicted, but in fact were quite complex. They varied on at least four dimensions and probably others about which I knew nothing. The dimensions that I know about I call level, scope, authority and identity.

Level. Public events were open to everyone; men, women and children attended them together. Private events were open to women and children at single-women's residences or to men at single-men's residences. Secret events were held at residential-type structures used as workshops for preparing instructional materials or classrooms for presenting instructional sessions. Both were accessible to males who had been circumcised and to boys who were in the process of being "sung" in preparation for their impending circumcision. Top secret events occurred at male-only dance grounds or at DREAMING SITES that marked locations of ancestral events and were accessible only to circumcised males.

Scope. Matters of scope were considerably more challenging. Here I offer some examples. Apparently everyone knew what shields were and that designs were painted on them, but some designs were in the public domain including those that were used at the moment of circumcision, some were private or secret, and a few were top secret. In principal BULLROARERS were secret. In practice some men could manufacture them and others could not; some of them were sold to tourists in Alice Springs, others were not; they could be heard by everybody but should not be seen by women. The objects themselves were not restricted, but the designs on them might be. Men were not invited to a single-women's residence when women sang, but men everywhere in the camp could hear the women when they sang.

Authority. Restrictions could be tighter or looser depending upon who expressed an opinion. Men who reviewed my audio recordings and photographs told me which ones contained restricted materials and which ones did not, but unanimity sometimes was lacking, with conservatives favoring total secrecy and liberals favoring more openness.

Identity. It was bad for racists and other hostile outsiders to know anything at all, but it was important for sympathetic outsiders to learn "the proper Alyawarra way".

In the context of camp life, the scope of restrictions was broad; i.e., it was necessary for Alyawarra men to restrict access to any event that included even one restricted component. In the context of writing this paper, I could control the scope with much finer precision; i.e., I could describe unrestricted aspects of an event and omit or disguise restricted aspects.

It is never easy to balance matters such as these, and is especially problematic 47 years after conducting the fieldwork. The many lines between unrestricted and restricted were fine. I attempted to stay on the safe side of them but may have strayed across them sometimes. If so, I apologize for my errors.

Personal privacy is a problem. In this account, I identify people only by personal identification numbers, sex and arbitrary initials (e.g., 056♂DJ), and use those codes only for the most significant individuals in any event. Since white Australians in 1971-72 had a long history of defacing and destroying Aboriginal sites, I use numerical codes to identify sites and other locations, and disguise events and their directions and distances with enough deliberate imprecision and omissions to conceal true locations.⁴ My restricted access photographs and audio recordings are archived at the Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra, ACT, Australia.

Generic methods and alloparenting.

In general, the Alyawarra project as a whole was designed as exploratory research. To paraphrase Kaplan (1964:149), it was intended to see “what would happen IF ___”; it was an exercise associated with new techniques, inviting serendipity and chance discoveries; it was part of what we do to deserve being lucky. Hence this paper often deals with methodological issues. First I discuss generic data collection and analysis in the project as a whole, using alloparenting to demonstrate how the generic methods worked. Next I discuss the specific methods that I used to record and analyze the data that appears in the narrative summary.

I designed the Alyawarra project around two methodological innovations that were unnamed in 1971 but were labeled later as instantaneous scan sampling and unsupervised pattern detection.

INSTANTANEOUS SCAN SAMPLING is a data collection methodology with which an observer records an individual's current activity at preselected points in time. It yields a sample of states, not events, and can be used to estimate the percent of time spent in various activities. Often it is used to obtain numerically coded data from a large number of group members, by observing each in turn. If the behaviors of all visible group members are sampled within a very short time period the record approaches a simultaneous sample of all individuals. Such data are almost impossible to obtain by most other sampling techniques (paraphrased from Altmann 1974:258-59). I have described my observational methods at length in other publications cited in fn1 above.

⁴ I have paid special attention to Moyle's (1986:19-21) very valuable guidance with regard to access restrictions.

UNSUPERVISED PATTERN DETECTION is an analytical methodology that can be used to detect patterns in numerically coded data generated by instantaneous scan sampling. The currently popular topic of data mining can be subdivided into modeling that uses traditional statistics to generate a global summary of the data, and pattern detection (sometimes called pattern recognition or pattern discovery) that uses nontraditional procedures to search for local structure in the data (Bolton et al 2004:67). “Pattern” can be defined in various ways including informally as “a configuration of data that is of special interest”, formally as “a data vector serving to describe an anomalously high local density of data points”, contextually as “local deviations from a background model”, and so on (paraphrased from Hand 2002:1-2),

One objective of pattern detection in the Alyawarra database was to use diverse methods to discover significant non-random structure in the data as a possible precursor to seeking explanations for any such structure; i.e., to find anomalously high local densities of data points or local deviations from a background that were of theoretical interest (Morik 2002). In supervised pattern detection, the identities of special interests or previously known patterns must be provided by an outside source, supervisor or theoretician; in unsupervised pattern detection, the computer must decide when it has found a previously unknown pattern of special interest entirely on the basis of information in the database (Hand 2002). Both supervised and unsupervised approaches are applicable to the Alyawarra database⁵. Furthermore, testing patterns for statistical significance may be desirable (Bolton et al 2004) but patterns may be interesting and important without being statistically significant or amenable to tests of statistical significance (Wasserstein and Lazar 2016).

When I began my research, I planned to avoid dealing specifically with the Dreamtime because a century of prior work by others seemed to have exhausted the topic as Hiatt (1996) later suggested. Therefore no dedicated “Dreamtime” data sets are listed in Table 1.1. However, by Day070 of the project, I somewhat reluctantly accepted the fact that what I was seeing of the Dreamtime would supplement the reports of others⁶. I added the topic to my agenda without extensive methodological pre-planning, and my field notes contain a wealth of relevant data most of which I did not code for computer assisted analysis. Now, 47 years later, I have extracted, coded and analyzed the data manually and painfully, despite the presence of a good many DK (don’t know - missing data) values. My use of reductionism and ideas currently being developed in the emerging fields of artificial intelligence and data mining may offend some, and certainly

⁵ Supervised pattern detection performed by Kemp et al. (2004) re: kinship sections and kin term applications. Unsupervised pattern detection by Denham and White (2005) re: 377-person genealogical network; Denham (2012) on helical generations; Denham (2012 through 2016) on layering of genealogies, marriage practices, camp plans, subcommunities, residences, child care behavior, etc.

⁶ Spencer and Gillen 1899, Warner 1937, Kaberry 1939, Strehlow 1947, Rose 1960, Meggitt 1962 and more recent works by Goodale 1971, Bell 1983, Moyle 1986 and others.

they are imperfect. But maybe it is not too late for novel methods to shed new light on activities in Australian Aboriginal societies. In preparing this paper,⁷ I used the data listed in Table 1.1 for living people and their deceased ancestors.

- ProjectDay-and-time markers track all events discussed in this paper: ProjectDay numbers: began Day001, 1 June 1971; ended Day310, 5 April 1972.
- Time measures: 24-hour clock
- Distance measures: metric system
- Field research population: 264 living people + 113 deceased ancestors = 377 people
- Individual identification numbers: living males (♂) 001-150, living females (♀) 151-♀300, deceased people (♂♀) 301-425
- Portraits: black-and-white identification photographs of 227 living individuals
- Photographs of objects and activities: 225 color slides, 110 black-and-white prints
- Basic census data for field research population: demographics (sex, age, etc.), social attributes (language group, marital status, ancestral descent lines, patrilineal and matrilineal descent MOIETIES, marriage moieties) and genealogical data – 377 people by 21 variables = 7,917 DATA POINTS; i.e., identifiable elements in a data set.
- Expanded census data for field and archival populations: 1461 people by 97 variables = 141,814 data points
- Reconstructed genealogies of all individuals: father, mother, all known spouses and all traceable ancestors; see genealogies for SUBCOMMUNITIES 21 through 24 on 14 Sept 1971 (Denham 2014).
- EGOCENTRIC kinship data applications: 22 kinship terms; 104 egos x 227 alters = 23,608 data points.
- SOCIOCENTRIC kinship terminology: 2 patridescent moieties, 2 matrinescent moieties, 2 marriage moieties yielding a 4-SECTION kin terminology (see Figure 3.8 below)
- Alloparenting plus generic observational data. 41,813 alphanumerically coded records with 10 fields each (418,130 data points), covering 191 hours of behavioral observations at Gurlanda camp where I lived. Using a formal version of instantaneous scan sampling (Altmann 1974, Denham 2015:41) I recorded who did what with whom at specific locations, dates, times, etc., in transient events and ongoing activities throughout Gurlanda camp except inside of residences where visibility was systematically obscured. 41,813 records x10 fields each= 418,130 data points
- Communal mentoring data for *MHaM*. My records of circumcisions and social activities associated with them embody an informal version of scan sampling made under conditions including darkness in which the formal version was not usable. 35 fields of coded behavioral data for each of 69 actors associated with circumcission ; 35x69 = 2415 data points
- 2,600 group composition records listing individual members of residential groups, sleeping groups, task groups and their activities; approximately 20,000 data points.
- 27 camp maps and residence plans.
- 3 types of residences: ALUGERA for single females: NGUNDYA for single males; ANOARDEGAN for monogamous and polygynous nuclear families
- SEX-AGE CATEGORIES listed in Table 3.3
- Figure 1.3 shows geographical zones of interest here
- Standard meteorological data (not used here)
- 13 hours of audio cassette recordings
- 350 pages of field journal notes dealing with all aspects of the research

Table 1.1. Inventory of Alyawarra data sets and selected code sets.

⁷ All of these data, plus other Alyawarra data, plus my published and unpublished papers concerning the Alyawarra are on the web at the Alyawarra Ethnographic Archive <http://www.culturalsciences.info/AlyaWeb/index.htm> (Denham 1971-76/2007), and are archived at the Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra, ACT, Australia,

Alloparenting of children 0-8 years old. This précis of alloparenting (Denham 2015) of young children, primarily by females, serves two purposes. Methodologically it provides a technical foundation for my subsequent discussion of communal mentoring of older male children by adult males. Substantively it introduces a dominant theme in the Alyawarra world view and ethic embodied in the statement: “We take care of them.”

At any one time, most of the 264 living people in my research population resided in four camps at MacDonald Downs and Derry Downs Stations. A small group lived to the east at Lake Nash Station 330 km away, and several lived to the west at Utopia Downs Station 40 km away and at Warrabri Settlement 150 km away, all being straight-line distances. The population was highly mobile, thus the number and identity of people residing at each camp were highly unstable.

My 41,813 observational records included 1439 records that dealt specifically with the carrying of infants and children in the 0-8 year age range at Gurlanda camp where about 125 people lived during my observations. Here I review and summarize some findings relevant to that age range before I consider young men in the 14-27 year age range. I omit details, tables and all but one graphic. Additional information is available at my alloparenting paper (Denham 2015).

My observations of the carrying of infants and children focused on two narrow and precisely defined samples of 24 egos (i.e., infants and children between birth and 8 years old) and 103 alters (i.e., people whom I saw carrying those 24 children during my behavioral observations).

Fifty percent of the 24 children who were carried were girls and 50% were boys. Their ages were distributed somewhat irregularly, with girls ranging in age from birth through 6 years and boys ranging from 4 through 8 years, but there was nothing of special interest here.

Fifty-nine percent (61) of the 103 carriers were females and 41% (42) were males. In the 14-41 age range, 66% (28) of the carriers were females and 33% (14) were males. Females of virtually all ages carried more children than did males. Also larger children frequently carried smaller children: 18 girls and 13 boys in the 0-13 age range performed 30% of all carries (31/103).


Female carriers. On average, each girl in the younger (0-4) range received 79 carries by female carriers and in the older (5-8) range only 6 carries, a high ratio of 13.3:1. This pattern is even more interesting when compared with the low ratio of 1.9:1 for younger and older boys. In other words, females very frequently carried girls in their early childhood but only rarely in their later childhood, while they carried boys at a lower but more stable rate throughout their childhoods.

Male carriers. On average, each girl in the younger (0-4) range received 19 carries by male carriers and only 2 carries in the older (5-8) range, an 8:1 ratio that corresponds to the 13.3:1 ratio for female carriers. Likewise, younger boys received an average of 14 carries by males, and older boys received 6. The frequency of carries by males was lower than that by females, but the distributions were similar.

Seventy-five percent of carries were performed by females and only 25% by males; there were fewer male carriers, and each of them performed fewer carries.

Figure 1.2 is one of many possible examples of the enormous number and complexity of behavioral relationships detected in the Alyawarra dataset. It is a simple summary of one aspect of alloparental care as it was experienced by one child (115♂), a 6 year old boy who was carried 81 times by 38 different people and in ways that I believe fairly represented the population as a whole. Diagrams for the other 23 children show similar patterns, differing primarily in the total number of carries that each child received ranging from 2 to 226, and the diversity of each child's kin currently living at Gurlanda Camp.

The schematic genealogical diagram in the background of Figure 1.2 represents the people who lived at Gurlanda camp while I recorded the behavioral observations. The diagram contains four quadrants into which the camp was physically divided, each corresponding to an alugera-centered, genealogically-based matrilineal SUBCOMMUNITY.

Squares with letters and arrows  link relationships that bridge gaps between subcommunities. People represented by red circles (♀) and red triangles (♂) were the 24 infants and children who were carried during my observation sessions. The blue arrows indicate that the person at the flat end of the arrow was recorded at least once as a carrier of the person at the pointed end of the arrow. Figure 1.2 contains nuances that I ignore here.

Notice that ♂115 lived in the upper-left quadrant with his siblings, parents, grandparents and members of his mother's father's father's brother's son's family, all of whom appear on the genealogical background. Several of those people carried him, but several did not, as is true with regard to residents of other quadrants.

The diagram is suggestive of the diversity of carriers who served as alloparents for ♂115, but numbers provide a more informative measure. Perhaps the most striking feature of the data is that I saw the child's own parents carry him only one time (mother=1, father=0). They may have carried him frequently inside their residence where I could not see them, but they almost never carried him outside the residence where they were visible. For ♂115, most carries (91.3%) were

performed by older siblings, “cousins” of various kinds, and assorted “in-laws”. For the population of the camp as a whole, the mean rate of observed carries by mothers was 2.85% and by fathers was 0.285%. On average, parents performed about 3% of the visible carries that their children received, while children below the age of 14 years provided about 30% of the carries.

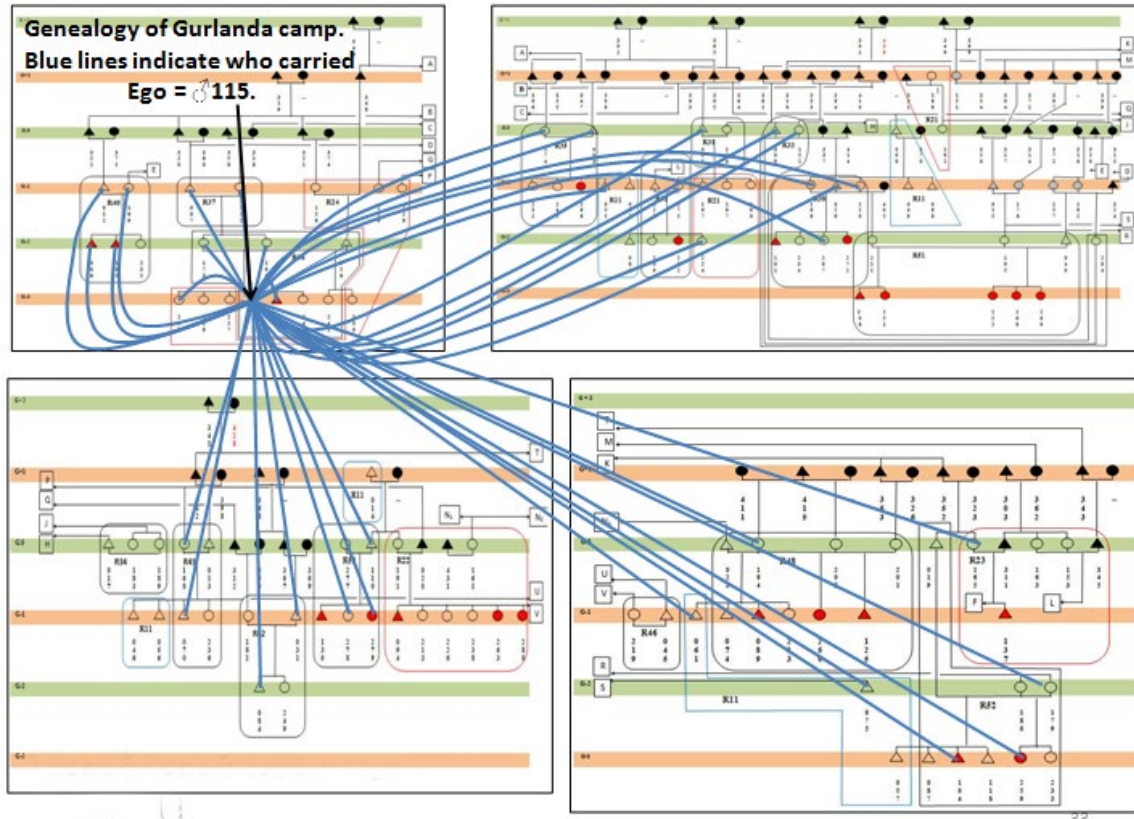


Figure 1.2. Genealogical relations between ♂115 and each of his carriers.

A mid-20th century truism (e.g., Lee and DeVore 1968:236-249) that artificial birth spacing was pervasive in hunter-gatherer societies followed Malthus (1798) and Darwin’s (1872) commitment to a theory based on competition (Todes 1989). It was not a “fact” but was an inference based largely on ambiguous demographic data and on the assumption that mothers were solely or primarily responsible for carrying their infants and young children whenever they had to be transported: e.g., among residences within camps, during frequent foraging SORTIES⁸, or during less frequent periodic migrations and infrequent but potentially devastating droughts and floods. The prevalence of alloparenting as described here means that artificial birth spacing by mothers using sexual abstinence and preferential female infanticide was irrelevant among the

⁸ Here and elsewhere I use “sortie” not with a military connotation, but rather as the simplest noun substitute for the common Biblical expression meaning “to go out and come in”, denoting frequent repetitive movements to and from a camp in which someone resides.

Alyawarra and perhaps was unnecessary among other hunter-gatherer societies in Australia and elsewhere.

From a Western perspective, the numbers for ♂115 in particular and for Alyawarra infants and children in general could be perceived and condemned as scandalous parental neglect, or as evidence that Alyawarra parents did not know which children were their own, reminiscent of the ethnocentric 19th century myth whereby non-genetic kinship systems were misconstrued as evidence of group marriage. But from an Alyawarra perspective, child care in general and child carrying in particular were community responsibilities based on mutual aid, cooperation and the ethical standard that said, “We take care of them.”

These behavioral data suggest that Alyawarra children were parts of the Aboriginal Commons (Hardin 1968), along with the land and its resources, and were treated as assets rather than as liabilities or parental properties. Everyone benefited from children as they matured toward their roles as adults, and everyone collectively participated in insuring their survival and success as members of the society. Thus child carrying was one of many manifestations of mutual aid and altruism – rather than competition and selfish behavior – that characterized Alyawarra society as a whole. Perhaps most importantly, Alyawarra children who received the kind of care described here were at the same time learning to give that kind of care to their siblings and cousins.

The alloparenting that boys received below the age of 14 years was followed between the ages of 14 and 27 years by a different kind of alloparenting that I call communal mentoring.

Specific methods and communal mentoring.

My observations and data concerning the maturation of males between 14 and 27 years old came from an imprecisely defined sample of the 264 living members of the research population, with various people participating at various times and places in various aspects of their training. Here I focus primarily on relationships among men (ARDWA), young men who were trainees (ARDWA ANDIDJA) and others who were trainers (older ardwa andidja, ARDWA ELGWA, ARDWA AYUA; Table 3.3 defines sex-age categories).

At least three major categories of people participated in the circumcisions and associated training at Gurlanda camp in 1971. First, boys could go singly or in pairs through the events leading to and including circumcision. In the eight circumcisions that occurred while I was there, six of the boys were dealt with separately and the other two were dealt with as a pair. For the sake of simplicity in the following narrative, I focus specifically on one person, 056♂DJ, unless otherwise noted. Second, circumcised men played key roles in the activities leading to and including circumcisions, and served as instructors during the years of training that followed.

Third, women played key roles with regard to the Dreamtime by teaching girls and boys throughout their childhood years the language and worldview based on the Dreamings. Furthermore, at the time of a boy's circumcision women participated in music, dance and graphic arts at public dance grounds and at their alugerlas without men; they participated with men in introducing infants to their Dreamings and in designating one or two young women, perhaps still unmarried, whose unborn daughters were likely to become future wives of the boy being circumcised; and they participated more generally in public singing, dancing and other activities that occurred throughout the week of the circumcision.

All of the activities described here were performed concurrently with ordinary activities of daily living that included strenuous work such as hunting for game, foraging for vegetable foods and firewood, and carrying water to the camp.

Two complementary objectives were in place here. My objective was to do my scientific research to the best of my ability. The Alyawarra objective was to teach me as much as possible to the best of their ability so that this and other papers would accurately reflect their traditions. It should be a self-evident truth that they taught me only a tiny fragment of what they taught their own young men, but the sheer quantity and complexity of what they taught me were consistently prodigious. 031♂MN said there had been much discussion among the men concerning the possibility of their singing the "wrong songs" that had been introduced from outside Alyawarra territory, perhaps because about 20% of the marriages were with spouses from language groups other than the Alyawarra. Thus people often reminded each other to "SING HIM the proper Alyawarra way". This does not mean that absolute purity prevailed, for I often heard that intellectual and physical properties were "mixed up", especially when items had been moved for protection to incorrect but safer Dreaming sites.

For any individual boy, the events described here occurred in a linear sequence reaching across a lifetime; for the society as a whole, the events were multiply concurrent, overlapping, and intricately entangled. Generally speaking, I present them in something approximating a linear sequence, a single strand for each individual. But sometimes I deal with multiple events that occurred simultaneously, and sometimes with mergers of important events that occurred in conjunction with the circumcision of someone other than 056♂DJ. I invite you to imagine the complexity of possible entanglements in a society of only 264 living people.

The summaries are anchored to a continuous time-line extending from Project Day 050 (20 July 1971) when I learned that preparations were in progress for a series of circumcisions, through Project Day 235 when I made my last visit to a Dreaming site that was directly connected with that series of circumcisions, spanning 185 days. Embedded in that timeline was the circumcision

of 056♂DJ and its immediately associated activities, to which I devoted my full attention over a period of 108 hours, beginning on Project Day 077, 18:20, ending on Project Day 082, 06:30. ProjectDay-and-time markers track all events discussed here and provide a sense of their pace and linearity. I include them in detail in Act 2.

Academic analogy and literary model. Here I abandon the traditional religious analogy, then construct a more detailed educational or academic analogy and demonstrate how it works. Just as 19th century observers based their religious analogies on their own experiences, I based my 20th century academic analogy on my ongoing experiences as a doctoral student in 1971-72. But I consistently followed the Alyawarra lead when they said repeatedly: “We take care of him”, “We make him a man”, “We capture him”, “We sing him”, “We cut him”, “We teach him.” In the *MHaM* Table of Contents and in the text, I specify six major points where an academic analogy was important.

In a sense *MHaM*, the narrative summary at the center of this paper, is a literary work structured in 5 acts encompassing 35 scenes. Think of it as a play or opera, or perhaps as a frame story such as the Mahabharata, the Arabian Nights, or the Canterbury Tales, in which the constituent segments are not always linked in a simple, linear fashion. By way of further analogy, especially in Act 2, imagine that you are watching and hearing a 5-day-long Italian opera or Indonesian *wayang kulit* but do not understand the language.

The best analogy here may be Godfrey Reggio’s (1982) experimental film *KOYAANISQATSI*, a visual and auditory tone poem that dispenses with dialogue and descriptive text. Reggio’s concepts and Ron Fricke’s cinematography evoke a long series of historical events, and Philip Glass’s minimalist soundtrack⁹ evokes the incessant Alyawarra singing. While *Koyaanisqatsi* shows things falling apart in a high-tech world, the Alyawarra project shows things working together for perhaps millennia in a low-tech world. However you interpret it, the fact that you cannot transliterate the nonverbal soundtrack does not mean that the production as a whole is incomprehensible; it simply means that you must watch and listen more carefully to comprehend what is happening. I am unable to translate the text from Alyawarra to English, but I have embedded an English language commentary and a glossary to assist you.

⁹ “The audience sat silently through the film, and then erupted into an uninhibited cheering that was almost frightening in its intensity...the score for *Koyaanisqatsi* is invigorating, often tremulously beautiful, and almost extraordinarily in synergy with the visions projected upon the screen. – Tim Page, 16 May 1985, *New York Times*.

I follow Freeman Dyson's (1997:14) argument that "case studies provide more insight into past and future worlds than any statistical analysis". I suggest that *MHaM* as a whole is a case study, or perhaps a nested collection of case studies.

Figures 1.3 and 1.4 provide visual orientations to the narrative and tabular summaries below.

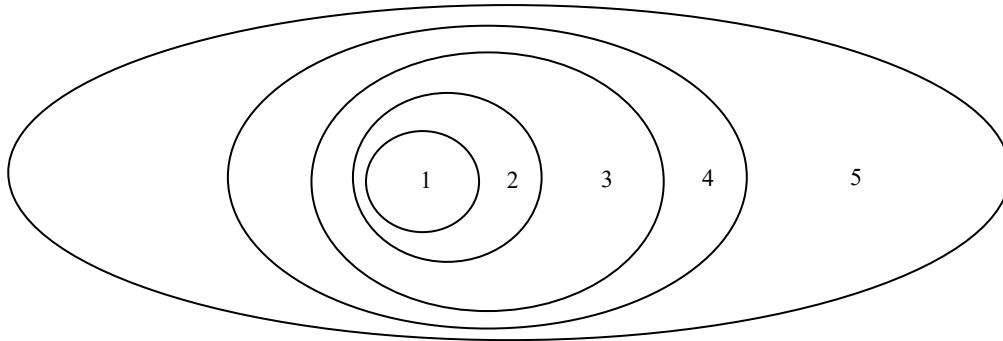


Figure 1.3. Zonal plan (not to scale) of the distribution of important sites mentioned in this paper.

- Zone 1. Gurlanda camp.
- Zone 2. Close-in hinterland where preparation areas and dance grounds were located.
- Zone 3. Distant hinterland where raw materials were collected.
- Zone 4. Remote Alyawarra territory where Dreaming sites were located.
- Zone 5. Regions outside of traditional Alyawarra territory where other Alyawarra camps were located.

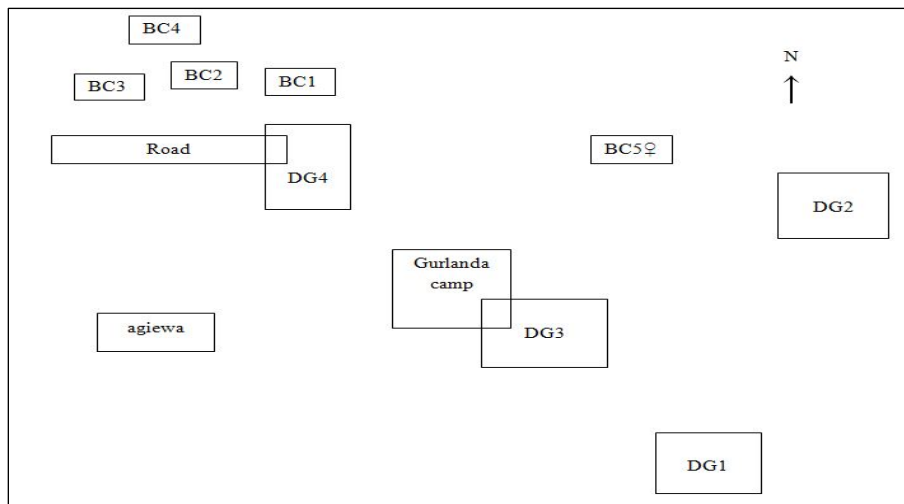


Figure 1.4. Schematic diagram (not to scale) of Gurlanda camp and environs when 056♂DJ was circumcised, including the camp residential area, *agiewa*, business camps (BC), dance grounds (DG) and the road at the west end of which the circumcison occurred.

Circumcision. Circumcision is the clearest unifying element in this paper. In the context of the Dreamtime, circumcision was a biological event with many social overtones, and a social construct known colloquially by outsiders as “initiation” was built around it. I use the “I-word” only once - here alone - to link my work to historical documents identified with that label. Furthermore, I do not use “rite, ritual, ceremony, myth” or other terms that have religious connotations. The absence of these culturally and theoretically biased terms does not reduce the intelligibility of my presentation, but in fact simplifies and clarifies it.

Based on highly contentious and contradictory reviews of male circumcision by the World Health Organization (WHO 2007, 2008, 2010), the US Centers for Disease Control and Prevention (CDC 2014) and a great many others (including Morris, Krieger, Klausner 2017), I approach excision of the foreskin as matter-of-factly as possible. This minimal form of circumcision is not a medically necessary treatment, but is a common human custom that characterizes approximately 30-33% of males above the age of 14 years worldwide (WHO 2007:7). On the basis of poor quantitative data, WHO (2010) reports that the typical or ordinary age at which males are circumcised ranges across cultures from birth to old age, most frequently among neonates and diminishing through the teenage years and into the 3rd decade of life. Thus the Australian Aboriginal mean of 16+ years and the Alyawarra mean of 14+ years may be higher than the unspecified global mean, but they are not anomalous. In its minimal form as practiced among the Alyawarra in 1971-72, male circumcision carried benefits and risks, but was far safer than female genital mutilation practiced widely in Africa (WHO 2008, UNICEF 2013).

Communal mentoring: data collection, coding and analysis. I attempted to be quite precise in designing and collecting the generic data that I used in preparing my earlier papers on topics including alloparenting of small children, However, I used a closely related but much more improvisational methodology when recording activities that expand on the alloparenting data and appear in *MHaM* below.

Table 1.2 briefly outlines the observational recording methods that I used for *MHaM*. Since I had no idea in advance of what would happen from moment to moment during *MHaM*, I could not use a pre-designed form or vocabulary to record what I observed. Rather, I relied on general principles to guide my improvisational data recording, and standardized my procedures and vocabulary as I accumulated the data that I present in Part 2 of the paper. They are similar in “spirit” but different in technical details from my other methods.

My analysis of the data in Part 3 does not attempt to encompass everything. It focuses on the social organization of *MHaM*'s population as a whole and a few manageable topics within it.

An **Actor** was a named person with a unique identification number (**Id#**), a sex marker (**♂/♀**), and an arbitrary pair of initials (**DJ**) that I use for my own mnemonic purposes; e.g., **056♂DJ**, and I counted an actor only when I described the person's immediate performance as an actor in *MHaM*. These and other color codes facilitated counting.

Figure 1.5 shows codes for segments of the narrative. They systematically identify act and scene, location, day and time, counts or estimates of unidentified ardwa andidja, Country, and a short title. I abbreviate or expand it as needed. Alternate Location entries include DG# (dance ground#), BC# (business camp#), DS# (Dreaming site#).

During Project Days 077-082, approximately 200 males and females of all ages congregated at Gurlanda camp to participate in the events associated with the circumcision of **056♂DJ** as described here.

- 69 individual **Actors** were my units of analysis.
- An **Actor** either performed an **action** or was the recipient of an **action** performed by someone else (e.g., **016♂XX** painted a design on the back of **020♂YY**). Both **016** and **020** were **Actors**; **painted** was the **action**; **design** was the **object**.
- **Actions** occurred at specifically recorded dates, times, locations and distances from Gurlanda camp.
- **Actions** were performed by single or multiple actors; e.g., “**17 women (164♀GL, 176♀PJ, ..., etc.)** performed a **shuffle dance**”.
- **Objects** were physical items such as shields, tools, various types of artistic creations, etc. with which **actors** repeatedly interacted.
- **DREAMINGS** are numerically and color coded (**D###**), and are defined at Table 3.5.
- **COUNTRIES** are numerically and color coded (**C##**), and are listed at Table 3.7.
- **KINSHIP TERMS** are numerically coded (**KT##**), and are listed at Table 3.12.
- People who participated in actions only as members of a kind of “Greek chorus”, performing **background** music and dance, or other **supporting** roles, were acknowledged but not labeled as actors, and were omitted as individuals from the numerical data.
- In the text, a **recordable action** was captured by an ordinary English language **verb** that was accompanied by one or more **actors** and **objects**. The action was conceptualized at an intermediate macro-level in a reductionist manner (e.g., “**016♂XX** painted a shield”).
- I entered 704 **actor Id#** (e.g., **056♂DJ**) in-line in the text, and extracted those data as countable proxies for recordable actions.
- Due to the length of *MHaM* (24,200 words), I have left **actions** and **objects** embedded as **key-words-in-context** and have not extracted **texts** for statistical analysis.

Table 1.2. Rules for creating and reading *MHaM*.

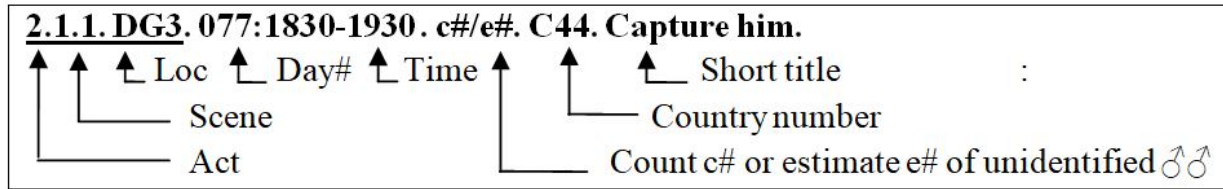


Figure 1.5. Key to headings of acts and scenes.

2. *Narrative summary.*

Make Him a Man: A Play in Five Acts.

By the Alyawarra of Central Australia © 1971

Recorded by Woodrow W. Denham © 1971

Edited by Woodrow W. Denham © 2018

Contents

Act 1. Preparation.

Prelude or overture: getting ready for the event.

Act 2. Sing him.

The boy was accepted and prepared for admission to graduate school.

Act 3. Teach him at BUSINESS CAMPS.

The young man as a student attended lectures and demonstrations.

Act 4. Teach him at DREAMING SITES.

The young man participated in graduate level field work.

Act 5. Teach him at INCREASE EVENTS.

The young man graduated and assumed responsibilities for maintaining the integrity of the universe.

Act 1. Preparation.

1.1. Talk and sing in public spaces. These unrestricted activities that occurred during Days 050-076, were precursors to events that followed, but seemed not to be specifically tied to those events. For example, I was invited to tape record singing that occurred for an hour or longer on almost any night at campfires, and sometimes during the hours of daylight, and almost everyone participated, men at the ngundya, women and children at the alugeras.

Preparations were performed in varying capacities by all of the men at Gurlanda including mature and senior men, but also young men who were circumcised one or a few years earlier and

were receiving intensive “on-the-job training” daily. Often young men were passive learners as older men explained or enacted Dreaming events for them, but mostly they “learned by doing”.

The boys to be circumcised were still categorized as children, and associated almost exclusively with their mothers and other women and children at their anoardegans and alugerans. Since they had limited access to the lives of circumcised males at the ngundya, they probably had less knowledge of the preparations than the women had.

1.2. Acquire raw materials. Systematically collecting materials during sorties into the countryside surrounding Gurlanda camp began 27 days before 056♂DJ was “captured” to begin his transition to manhood. From Day 050 to 077, I frequently accompanied men as they collected materials from the sand hills and rocky outcrops within Figure 1.4, Zone 3. The materials included special pieces of wood of various species, sizes and shapes; soft paint stones in white, yellow, red and black; an adhesive made by slowly burning SPINIFEX grass and collecting its resin; eagle down; feathers of emus and other birds; and slender leafy poles. They collected kangaroo fat during hunting sorties, and obtained human hair as needed by trimming the beards of all of the men in the camp. Fire was an essential constituent of these activities, so they collected and transported dead wood to use as fuel.

1.3. Process raw materials. I observed many of these activities as the raw materials were collected. Work went on at the agiewa or “workshop” several hundred meters from the Gurlanda ngundya, concealed by surrounding sand hills that isolated it from accidental visual and auditory intrusion by women and children. Men carved and painted shields with numerous lateral ridges that added interesting textures to the top surfaces, and carved musical clap sticks from the hard cores of mulga trees. They made bullroarers in two sizes, UNGUNJAIYERA small ones and GORNAIDJA large ones; they sent some of the small ones to shops in Alice Springs but kept the large ones for their own use. And they constructed ADNARDUNJA, carefully shaped and heavily decorated objects, typically wooden poles, to attach to the heads or bodies of dancers who wore them during musical presentations. Three or four men ground paint stones on hard surfaces, yielding one or several containers of powder of each color. They diluted red powder with other dark colors, mixed it with water and applied it as a matte finish undercoating on all wooden objects; they mixed it only with water to make a bright red foreground paint; and they dry-mixed it with white eagle down to make it pink or rust-colored. Then they applied paints of all these colors onto the undercoating to yield designs on shields and other objects. When mixed with water, all of these colors made body paints and three-dimensional sand paintings. Feathers of emus and other birds required no processing, but were stored and used as needed at various times before and after the circumcision. Human hair string required a great deal of processing since the men used well over 700 m of it to make belts, components of decorated objects and large artifacts. Two men used poison to kill three eagles whose down they plucked and stored in clean

syrup cans. The birds had a lot of meat on them but were inedible because of the poison they ate and the devils that resided in them.

When other preparations were nearing completion, attention turned to painting abstract designs and a very few representational designs on the convex or outer surfaces of shields that would be used, washed, repainted and reused repeatedly during the days between capture and circumcision, and would continue to be washed, repainted and reused during teaching sessions that stretched into the indefinite future. Some men were better craftsmen, artists, singers and dancers than others, but all paid meticulous attention to details in replicating traditional events.

1.4. BC1. Train the ethnographer. This process ordinarily was unnecessary but, with me as a novice observer, it was an important matter. In addition to demonstrating activities informally, men sometimes gave me explicit instructions. On Day050, 009♂BM took me to the agiewa (BC1) where six men were making undecorated bullroarers for sale to tourists in Alice Springs, and several ardwa andidja were observing carefully. Youngest circumcised men could see bullroarers but not make them; older young men could prepare the wood but could not paint the designs; mature, senior and elderly men could make, paint and use them.

On Day070 at the agiewa again, 009♂BM and 013♂JJ began to introduce me to the painting of shields using two designs from D08 emu bird Dreaming,¹⁰ two from D07 SUGARBAG ants Dreaming, and one each from D03 JABA grub and D01 AUHRA kangaroo. First they painted 009♂BM's pair of emu Dreaming shields, applying the red matte finish primer coat with fingers, yellow stripes with a shaving brush, and white dots with the end of a small stick. The next day, 009♂BM invited me to watch 013♂JJ and 021♂JH paint shields for 013♂JJ's D06 sugarbag Dreaming, a wave pattern of several stripes running lengthwise in red, yellow and white. Finally, 013♂JJ and 009♂BM cleaned the shields they used the previous day and painted designs for D03 JABA OODNURINGAIDA grub and D01 auhra kangaroo Dreamings. Their use of D03 jaba and D01 auhra Dreamings in the training sessions segued perfectly to the circumcision of 056♂DJ a few days later when the primary Dreamings were D03 jaba and D01 auhra.

I liken the repeatedly cleaned and repainted shields, accompanied by brief dance dramas and chants, to “windows on the Dreamtime”, opening to reveal events that occurred long ago, closing immediately when the re-enactments or replications ended. The same metaphor could apply to other artistic creations that were constructed over many hours by one or more men, used briefly in a presentation, then deleted like “software” or concealed promptly like “hardware”.

¹⁰ See Dreaming names and numbers in Table 3.5.

Begin Day077

Act 2. Sing him.

2.1. DG3. 077:1830-1930. e50. Capture him.

Academic analogy #1. The boy was accepted for admission to graduate school.

Shortly before sundown, 013♂JJ and 009♂BM said the time was right to “capture” 056♂DJ. 013♂JJ was GARBUDA, head or senior boss of 056♂DJ’s father’s father’s descent line, and 009♂BM was KURTUNGURLA, custodian or senior manager of 056♂DJ’s mother’s father’s descent line. These two men were responsible for high-level coordination of everything associated with 056♂DJ’s circumcision, not as political leaders for Central Australian societies were anarchistic (Hiatt 1996;99), but as knowledgeable scholars or experts in their fields. The choreography and execution of each individual dance, painting, song or other event was distributed among mature, senior and elderly men based primarily on kin relationships, while young ardwa andidja watched, assisted and increasingly assumed responsibilities as their knowledge and skills matured.

With the approval of the two senior men, an elder genetic brother 046♂TJ took the arm of 056♂DJ his younger brother and led him out of Gurlanda camp. All of the other men in the camp – probably more than 50 - followed them in a cheering procession to a dance ground several kilometers away where the first evening’s activities occurred. A great many women and children were present in Gurlanda camp and watching as the men captured 056♂DJ, but remained there when the procession departed.

2.2. Sing him for five days and nights.

Academic analogy #2. The boy was prepared for admission to graduate school.

As a child, ♂056 had witnessed captures but had learned little or nothing about them. That changed on Day077, when he began to learn at first hand.

To “sing him” was a highly complex undertaking that spanned five days (077-082) and nights and involved almost all of the people in attendance. The events occurred at one agiewa, at four business camps (BC1-4), at four dance grounds (DG1-4) of which DG3 was within Gurlanda camp, and at a couple of other lesser locations that I heard about but never saw. Differences between an *agiewa* and a business camp never were perfectly clear to me. I think an *agiewa* was analogous to a “work shop” and was functionally “backstage”, while a business camp was

analogous to a “classroom”, sometimes called “the office”, and was functionally “on stage”. They looked alike but functioned differently.

Throughout this series of events, 056♂DJ was a recipient of actions done to him, for him and with him, but virtually nothing was done by him. Throughout this and all other nights and days leading to the circumcision, singing was almost uninterrupted. Short pauses occurred between songs and when special things happened, and longer pauses occurred between acts; but other than that the singing was continuous within scenes; thus the expression to “sing him”.

2.2.1. DG1. 077:1930-2115 . e20. PLAY WITH HIM. Shortly before dark the procession arrived at a mixed stand of trees that sheltered DG1. Some of the young men wrapped 056♂DJ in a blanket with his face covered, laid him on the ground beside a moderate fire, and identified him as *walbiya* “the prisoner”. The men sang a lengthy series of short verses about a D01 kangaroo Dreaming, using a melody that was uniform, lyrics that changed progressively, and a rhythm maintained by most of the men sitting in a circle near the fire and pounding on a sandy mound with heavy, meter-long poles. As the singing became more emphatic, several young men undressed and began a series of dances in which they emerged separately or in pairs at high speed from the woods near the end of the dance ground, made kangaroo-like hopping motions in a straight line past 056♂DJ, and disappeared into the woods at the opposite side of the fire. The D01 kangaroo theme was a recurrent and dominant feature of 056♂DJ’s transition to manhood.

Five young men just a year or two older than 056♂DJ performed the final dance of the evening. Several assistants applied charcoal stripes a few inches wide to their faces, torsos and legs, and attached white down in thin stripes to outline them. As the body paints neared completion, 002♂JR and 029♂WM collected handfuls of leafy boughs from a nearby tree and gave two clusters to each man who advanced in single file from the west fire toward the song circle at the east fire. Backed by continuous music, they leaned far over to the left, then to the right, each time beating the ground with the boughs. From the straight up position they leaned forward, put their hands on the ground, and moved forward the way a kangaroo advances slowly. On the third repetition, they passed directly over 056♂DJ. At 2010, the pounding, singing and dancing stopped suddenly and the men asked me to replay my tape recording of the event. I was surprised and pleased by its good technical quality.

When all activities ceased about two hours after they began, everyone including 056♂DJ walked back to Gurlanda. Someone said the young men had “played with him” that night, an expression I heard frequently during these events. This description operationally defines the expression.

Begin Day078

2.2.2. DG3. 078:0920-1000. Present a four-part drama. DG3, which encompassed much of Gurlanda camp on Day078, was known as the “women’s dance ground”.

Communal mentoring. A procession began in which almost all of the females and uncircumcised males in the camp, plus a small group of senior males as leaders, briefly visited every residence in the camp. 021♂JH carried a can of water and a 10 pound flour bag half-filled with tea, sugar and flour, sat it on the sand in front of each residence, and used it later in the morning to feed some of the young men at DG2. By emphasizing the collectivity of the community and the sharing of food, this event may have been an enactment or dramatization of the Alyawarra mantra that says “we take care of them”. However, someone said the flour, sugar and tea would “trap the boy”. I didn’t understand that statement.

POLYGYNY. When the procession reached 013♂JJ’s residence, his wife 168♀DJ and her full sister 158♀RM joined the procession and stayed together throughout the remainder of the week. At 027♂JC’s residence, 168♀DJ and 158♀RM took 027♂JC’s wife 188♀AC and 170♀LL her full sister by the arms and led them into the procession. The classificatory¹¹ kinship term that 056♂DJ used for 168♀DJ and 158♀RM was AMAIDYA¹², his genetic mother plus her genetic sister; for 188♀AC and 170♀LL it was MURIYA (his wife’s mother; i.e., the biological mother of several of his older brother’s wives and the mother of a young girl who could become his own wife, plus her genetic sister). The pair of genetic sisters were members of C38. The emphasis on two women who were either genetic or classificatory sisters in these and similar roles presumably was related to the frequent occurrence of SORORAL POLYGYNY in which an Alyawarra man married two women who were biological or close classificatory sisters.

Rehearsal of circumcision. Next 112♂JB, garbuda of C38¹³, performed a dramatic and powerful solo prancing dance. He secured a bundle of emu feathers called AGAILBA at the back of his belt, ran in a prancing manner about 30 meters, threw handfuls of sand into the air, and returned to the starting point. Two younger men, 031♂MN and 040♂JD, separately repeated the same actions, whereupon all of the women and children dispersed to their residences. This performance of the agailba prancing dance was an early intimation of the circumcision itself,

¹¹ In general, kin terms are either descriptive or classificatory. A descriptive term refers to only one specific type of relationship, while a classificatory term groups many different types of relationships under one term (Morgan 1870). In English, “brother” is a descriptive term based on a close genetic relationship, but in Alyawarra, the term that encompasses that close genetic relationship is a classificatory term that also encompasses one’s own father’s brother son, mother’s sister’ son, and a host of other relations that are somehow analogous to “brother” but lack the close genetic basis of the English language term.

¹² See kinship term definitions in Table 3.12.

¹³ See Country names in Table 3.7

recurring with variations over the next several days and nights, the final time just seconds before 056♂JJ was circumcised.

Prisoners in custody. Finally 031♂MN made a depression in the sand, 004♂LP drew a stick figure in it resembling a man with six arms, and 011♂ML scooped a few grains of sand from between the legs and handed them to various people who threw them back into the depression. Then 011♂ML drew two parallel stripes in the sand representing two walbiya prisoners who would perform in the evening's activities. Someone erased the lines and the event ended.

In the past, the prisoner was "in custody" of the women and children of his mother's alugera; now he was "in custody" of men at his father's ngundya. 056♂DJ referred to 011♂ML as amburnia, his wife's father, thus suggesting an arranged marriage. I was told several times that the kin relationship between 056♂DJ and the two walbiya was irrelevant, but it probably was not coincidental that 011♂ML was the husband of 170♀LL, therefore the biological father of the little girl who seemed to be in line to become the wife of 056♂DJ.

Thus the procession throughout the camp constituted a frame that said "we take care of them". It enclosed the identification of the mothers and their children in an anticipated arranged marriage, announced the impending circumcision, and transferred the boy from women's custody to men's custody. Four tightly focused scenes were embedded in the comprehensive frame story entitled "we take care of them", all of which were embedded in the much larger frame story entitled "make him a man" ... a story within a story within a story.

2.2.3. DG2. 078:1015-1205. c26. Play with him. DG2 was similar to DG1 but was a bit farther from Gurlanda. The morning's event was a modified daylight re-enactment of the procession and ensuing events on the preceding night at DG1. During the action, 056♂DJ began to emerge from his initial confinement. He lay on top of a blanket in a slight depression beside a tree with his face loosely covered by a shirt, considerably freer than he was the night before. Over the coming days and nights, the coverings and constraints diminished progressively.

The young men sitting in the song circle were in a state of constant flux, staying in place for a few minutes, then leaving the circle to be replaced immediately by somebody else whenever 113♂AM called for a "fresh one". The young men maintained the rhythm with small, super-hard mulga wood clap sticks that rang like steel bells when hit together. At 1040, 029♂WM tapped the sticks used by five young men who immediately left the song circle, undressed and joined 029♂WM about 40 m away at the paint circle where he had positioned paint stones and eagle down. 031♂MN sat down beside 056♂DJ's head and remained there until the end of the session. At the risk of getting ahead of my story, I note that 113♂AM who called for "fresh ones" was the man who later circumcised 056♂DJ.

At 1050, the 31 men at DG2 were distributed as follows:

- 12 ardwa andidja in the song circle
- 8 ardwa andidja in the paint circle
- 6 ardwa andidja sitting on the north side of the tree
- 056♂DJ lying beside the tree with 031♂MN sitting beside him
- 009♂BM supervising at the paint circle but not a member of it
- 113♂AM and 011♂ML supervising at the song circle but not members of it

Certainly the mature, senior and elderly men were present, functioning primarily in managerial capacities, but a great many ardwa andidja spanning ages 14 through 27, most of whom remain unnamed here, participated strenuously in the performances.

The body designs with fine outlines of white down were the same as those from the previous night, but red down replaced the black charcoal. While the decorations were being applied, singing continued at the song circle, and on several occasions the men at the paint circle "answered" those at the song circle with songs of their own, sung softly and with no accompaniment, perhaps call and response, perhaps faint echoes of the more vigorous singing at the song circle. When the designs were done, 009♂BM arranged the dancers in single file as before, took them to the midpoint between east and west circles, and withdrew.

The designs on the men's bodies were for D01 kangaroo Dreaming. 032♂BC, 053♂WC, and 059♂TJ wore D01 kangaroo Dreaming designs from C42, while 040♂JD, 042♂JJ and 051♂CM wore designs from C38. The performance was the same as that described on the previous night, including the passage of the dancers over 056♂DJ, a literal "rite of passage" from childhood to adulthood in D01 kangaroo Dreaming.

It took sixty-three minutes to decorate the men, and the performance lasted four minutes and fifteen seconds. F. Dyson (1997) suggests that longer messages and other kinds of activities attributable to humans and computers are more error-prone than shorter ones. That is plausible. If it is true, keeping the duration of many dance performances to five minutes or less contributed to maintaining the integrity of the Dreamtime.

As soon as the action ended, the men from the song circle followed the dancers and 009♂BM to the paint circle at the west end of the dance ground, leaving 056♂DJ under the shirt near the song circle. The older men then taught the young men about the designs on the dancers' bodies. Several of those young men were initiated last year and had not seen these designs before.

056♂DJ remained covered by the shirt while the teaching was in progress, and was released five minutes after it ended.

2.2.4. BC1. 078:1300-1815. Prepare materials to use later. Although the week-long circumcision event dealt with the coming of age of 056♂DJ, that person was a child at the moment when these Business Camp events occurred, so he could not attend, even with his head covered. All of the people who attended events at a Business Camp were previously circumcised males. In a sense the circumcision of 056♂DJ was the occasion for training all of the other young men, in this case focusing mainly but not exclusively on D01 kangaroo and D03 grub Dreamings.

When I arrived, four senior men 013♂JJ, 112♂JB, 021♂JH, and 027♂JC were painting shields and 026♂BM was spinning hair string in preparation for using all of those items between 0500 and 0630 on the following morning.

027♂JC and 112♂JB were making a matched pair of shields for D01 kangaroo Dreaming of C38. Both 112♂JB's father and 027♂JC's mother were members of C38 where D01 kangaroo was a principle Dreaming. At the center of a shield was a white dot on the standard red background, surrounded by two concentric circles of dots. There were several parallel lines of white dots lengthwise on the shield. The circles were abstract representations of "joints" in the center of kangaroo's back and the lines were tendons in kangaroo's legs. As the shields were completed, 112♂JB, 027♂JC, and 019♂SM began to chant very softly to "make the kangaroo fat".

At the same time, 021♂JH and 013♂JJ were making an unmatched pair of shields for D02 grub Dreaming. One had concentric white circles and parallel white stripes perpendicular to the long axis. The other had alternating red and yellow stripes a few cm wide running the full length of the shield with each red-yellow boundary covered by a line of white dots.

Both kangaroo and grub were associated with C38, but their activities differed. D01 kangaroo went to Ayers Rock and returned to C38, while D02 grub traveled via a site near Ooratippra Station to Emily Gap where its travels ended; GULLUH – finished, the end, dead.

The event described here is the first of six day-long instruction sessions conducted at Business Camps in conjunction with the circumcision of 056♂DJ, and the first of sixteen such sessions conducted in conjunction with all of the circumcisions performed at or near Gurlanda camp in 1971-72. In most cases, an event at a BC seemed to be a vignette, a parable evocative of events from the Dreamtime, or perhaps a short story that rose to a climax and ended with a dramatic musical presentation. But this first one, scene 2.2.4, which resembled the freestanding training

sessions I attended earlier, appeared to be a closed entity with no climax or conclusion. But in fact, it was the first of an ongoing sequence of events that went “on hold” pending the presentation of scene 2.2.5, and resumed several hours later in scene 2.2.6.

2.2.5. DG1. 078:1815-2010. e30. Play with him: fire dance. Their departure ended as they ran off in single file, panting and shouting three times in ninety seconds. The whole group of men, young and old, walked to DG1 for a second night to play with him, this time featuring fire dances.

After the first few songs following my arrival at the dance ground, three of the young men did the backward bouncing **D01** kangaroo dance toward the west fire. Everyone laughed loudly – theatrically - at the end of the dance. The dance was repeated a couple of times and was followed by more theatrical laughter. The fire in the west was extinguished and a dancer picked up a stick with a glowing end which had been placed in a little pile of hot coals a few minutes earlier. He did the **D01** kangaroo step backward toward the dead fire, swung the glowing stick in front of himself in a figure-eight pattern, swung it again in a tight circle right in front of his chest and threw it in a spectacularly high arc away from the dance ground. Then someone extracted a large flaming log from the east fire. When the next song began, three men performed a dance on the west side of the log. Each held his arms high and thrust his pelvis far forward so the fire illuminated his genitals more than anything else, in a dance that was done quite briefly and only once. The dancing got more and more vigorous and the pounding got louder, and after almost two hours of something resembling a fireworks display, the singing and dancing ended abruptly. To me, the experience was visually stunning but conceptually inscrutable.

Begin Day079

2.2.6. DG3. 078:2300-079:0700. Present three dramas. These events occurred at the women’s dance ground DG3. Unlike yesterday morning when the women’s dance ground encompassed much of Gurlanda camp, tonight a more restricted area located near the north side of the camp was divided into three major parts. They included a small space at the northern end of the designated area where **056♂DJ** stayed warm with a small fire and a windbreak, a much larger area at the southern end where men had a song circle, and 45 meters of empty space in between those areas that were used early as a walkway but later as a women’s singing and dancing area. An invisible center line demarcated one half of the area for use by **056♂DJ**’s own mothers, the other half for use by his potential wife’s mothers. The three scenes described here occurred sequentially. They began at 078:2300, but to simplify the labeling of Table 3.14, I use a beginning time of 079:0000.

2.2.6.1. DG3. 079:0000-0100. Prepare 056♂DJ. Several people worked for two hours to attire 056♂DJ appropriately for D01 kangaroo Dreaming of C38. 009♂BM, 010♂JR, 039♂KR and 1444♂ST watched as 112♂JB and 039♂KR lowered the blanket from 056♂DJ's upper body and attached white and pink eagle down front and back in a V-shaped pattern from waist to shoulders. 012♂BT wound a single-stranded hair string belt about 50 m long around 056♂DJ's waist.

1444♂ST constructed an intricate hat of twigs that covered the hair on 056♂DJ's head; the hat was a recurring theme that reappeared in numerous variations during the following days and nights. To make the hat, 1444♂ST placed small handfuls of twigs, stem up, around the boy's head and secured them in place with a long piece of woollen yarn, then wrapped human hair string around his head to cover the whole thing like a hat. He attached white down to cover the upper third of the hat and red down to cover the lower two-thirds, and a band of white down to encircle the bottom of the hat. Finally he inserted a most handsome agailba in the top of the hat, similar to the one made of emu feathers that 112♂JB tucked under his belt in his earlier solo dance, but in this case the white feathers came from a white cockatoo and the pink ones from a galah. This agailba belonged to 013♂JJ, the boy's biological father. Upon completion of the artistic work, 056♂DJ sat there until 0500.

2.2.6.2. DG3. 079:0200-0500. Arrange marriages. At the south end of DG3 a few men sang intermittently beside a fire. In the women's area between the men and 056♂DJ, the mother's group and potential wife's mother's group danced. Whenever the men began to sing, several women walked to the edge of the space separating the women from the men, formed an irregular line facing the men's song circle and assumed a "zombie-like" posture with their heads drooping to one side, their faces pointing toward the ground, their arms held loosely away from their sides. In that position, they bounced forward without lifting their feet from the ground, thereby leaving deep trenches in the sand. The dancing stopped whenever the singing stopped, all ending together at about 0300.

Sometime later, someone placed a small glowing stick on the ground in front of 168♀DJ where the women had been dancing, and someone else added another one. The two flamed up, died back down to red coals, and were moved to the center of the dance ground. Then someone else handed a small glowing stick to 170♀LL and another to 188♀AC. A large burning log was moved to the center of the dance ground where the little fire was. The two wife's mothers danced briefly beside it, then sat down on opposite sides of the log just south of the log itself.

A blanket was placed on the ground in the space between the two wife's mothers (east - west) and between the men's song circle and the flaming log (north - south). 1184♀LJ, 056♂DJ's genetic elder sister, leveled the sand and smoothed the blanket on it. The two D01 kangaroo

Dreaming shields made in the afternoon were placed side-by-side on the blanket, and four more women seated themselves forming a line on each side of the blanket, facing the blanket. On the west side of the blanket were 188♀AC, behind her 163♀TH, and at the end of the line 161♀MM. On the east side were 170♀LL, 168♀DJ and 158♀RM in that order. Small handfuls of white down were attached to the tops of 170♀LL's and 188♀AC's heads, and stayed there until the circumcision ended days later.

After the mothers and wife's mothers had assumed their new positions, 037♂LJ and 045♂JJ, 056♂DJ's proper elder brothers, prepared the walbiya for their part in the conclusion of the night's activities. These two men, the prisoners, corresponded to the pair of parallel lines drawn on the sand earlier in the day. They were seated at the south edge of the men's song circle, facing south; therefore, they were as far from 056♂DJ as they could be and remain on the dance ground, and they and 056♂DJ were facing in opposite directions.

The walbiya were 053♂WC and 048♂DR, but since I heard that any ardwa andidja could have played those roles, their identities may have been of no importance. This was the only case in the week-long event concerning which anyone said that a kin relationship was irrelevant; the default option in all other cases being that kin relations were of fundamental importance.

The designs applied to their bodies consisted of white down in two curving stripes, one from shoulder to shoulder across the mid-chest and the other from ear to ear across the chin, which they wore when they performed later in the morning.

At 0500, 037♂LJ and 045♂JJ finished embellishing the walbiya, who then turned around to face northward toward 056♂DJ. The two D03 grub Dreaming shields prepared in the afternoon were handed to them, and they got into tandem kneeling positions, 048♂DR in front and 053♂WC behind. At that time, 056♂DJ turned around to face south from his location at the opposite end of the dance ground. The number of men singers was decreasing from its peak of about twenty-five. At 0455, I identified only the following men remaining there: 005♂FM, 013♂JJ, 027♂JC, 037♂LJ, 045♂JJ, 057♂SM and 1444♂ST.

From 0500 to 0630, nothing noticeable occurred except that the men continued to sing and 1184♀LJ and 191♀ER continued to dance.

2.2.6.3. DG3. 079:0630-0700. Rehearse circumcision. In response to a signal that I failed to notice, the two walbiya, 053♂WD and 048♂DR, arose. Holding the D02 grub shields out in front of them, they began to rotate them back and forth from vertical to horizontal (90 degree rotations) and ran between the two sets of women seated beside the D02 kangaroo shields in the middle of the dance ground. As they passed through that space, 1184♀LJ and 191♀ER followed

them northward toward 056♂DJ. At that time, 056♂DJ was removed from his tiny windbreak by 010♂JR who had his hands over 056♂DJ's eyes. About half way to 056♂DJ, the walbiya and the two women stopped. The walbiya wagged the shields a few times, turned around and ran back to the blanket where the other two shields were lying. 056♂DJ, 010♂JR, and a very few other men followed them there. By the time 056♂DJ arrived at the blanket, the two D02 grub shields were lying beside the D01 kangaroo shields, the D02 grub shields directly in front of 188♀AC and the D01 kangaroo shields directly in front of 170♀LL, his potential wife's mothers. I don't know what happened to 1184♀LJ and 191♀ER.

056♂DJ was guided into a kneeling position on top of the D01 kangaroo shields facing 170♀LL, and 010♂JR removed his hands. 056♂DJ kept his eyes shut as 170♀LL embraced him with her right arm over his left shoulder, chin on his right shoulder. With her breasts pressed firmly against his back, she rubbed against him two or three times. He then turned around to face 188♀AC, and she did the same thing.

056♂DJ then arose from the kneeling position, and in a moment the four shields were relocated about ten meters southwest of the men's song circle. They lay on the sand in the same order as when they were on the blanket. They had been in a line from east to west; but now they formed a line north to south.

Immediately 1444♂ST and 010♂JR lay down on their backs on the shields and 056♂DJ was placed face down on top of them. 168♀DJ, 158♀RM, 188♀AC, and 170♀LL knelt behind him. As soon as all of these positions were assumed - a matter of a very few seconds - 112♂JB and 057♂SM shouted something very loudly and with vigorous arm movements down toward 056♂DJ and the men on the shields. The shouting took less than ten seconds. Gulluh: the morning's activities came to an abrupt halt.

Somebody moved the shields from the ground to the top of a clump of spinifex, and the crowd dispersed immediately carrying fire sticks to light their way home. As the sun rose, 056♂DJ returned to DG2.

Since the night was extremely cold, many people brought firewood with them when they came to the dance ground from home, a few of the women left the dance ground and collected wood from two or three nearby trees, and at least four and probably more Land Rover loads of firewood were brought in from the mulga stand in which the bore was located.

From a male perspective, a mother-in-law was bestowed upon the boy to be circumcised; from a female perspective, a woman's young or unborn daughter was more-or-less assured of having an appropriate husband (subject to adjustment later) when it was time for her to marry. From

013♂JJ's perspective, the boy's mother's brother made the decision and his wife's mother made the presentation, but I strongly suspect that 173♀MM and other powerful women would say that the wife's mother made the decision and the presentation, and that the mother's brothers supported her in that action. The marital link in the boy's parents' generation was replicated in his own generation by one or more arranged marriages with his genetic or classificatory mother's brother's daughters, thereby generating sororal polygyny that was common among the Alyawarra.

2.2.7. DG4. 079:1245-1315. Visit "the road". At 1245, I went to DG4 for the first time. 028♂DR and 009♂BM took me about 300 m south of the tent, into the sand hills just beyond the agiewa, where DG4 ABULA, the main and final dance ground, was nearing completion. Shaped a bit like a mercury thermometer, it was a large space, carefully cleared of spinifex grass and smoothed, with a bulb-like area at the east end and a straight and narrow stem extending to the west. The roughly oval bulb was about 12 m in diameter; the stem, called "the road", was about 65 m long and 4.5 m wide. Three fire mounds formed a north-south line across the bulb, and one stood alone at the west end of the road. In a sense, the entire week-long event focused on that last fire mound where the circumcision would occur.

2.2.8. DG4. 079:1850-1935. Relax with singing. After DG4 was prepared, nothing happened until shortly after sunset. At 1850, people began to assemble there and had a short song session. The men, about 25 of them, sat between the three mounds in the oval area and a windbreak at the extreme east end of the dance ground, while the women sat opposite them about 8 m west of the three fire mounds. The songs and dances were similar to those performed on Day 78. At 1935, everyone went home for a good night's sleep.

Begin Day080

2.2.9. BC1,2,3. 080:1050-1700. c48. Present three plays with shields and ADNARDUNJA.

Before I continue with this account, I must present visual examples of adnardunja, the Alyawarra term for decorated objects and associated body designs used in teaching about the Dreamings. Since the word appears repeatedly in the remainder of the paper, I urge you to read its definition in the glossary. On the one hand, the Alyawarra men who reviewed my photographs said that I must not include any of my color slides or black-and-white prints of adnardunja from 1971; on the other hand, if you do not see what I mean by that term, much of the rest of the paper will be hard to visualize or understand. Figure 2.1 is a compromise that shows two photographs of nurtunja, the Aranda term for decorated objects (Spencer and Gillen 1899: 299, 327). Their original captions said that each photo illustrated "one form of nurtunja" in 1899, and in fact each

was appropriate for illustrating a form of Alyawarra *adnardunja* in 1971. Alyawarra and Aranda decorated objects were not identical, but the differences between them were small despite the separation of 70+ years between Aranda and Alyawarra observations.

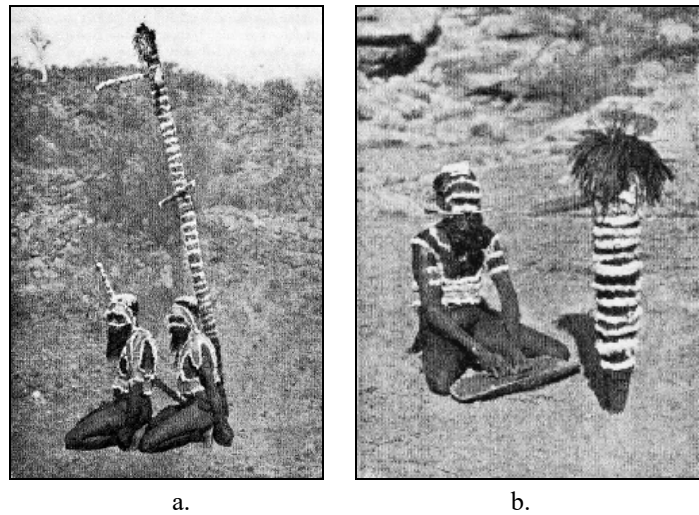


Figure 2.1. Aranda *nurtunja* decorated objects and body designs in 1899, here illustrating Alyawarra *adnardunja* in 1971; see glossary definition. (Spencer and Gillen 1899: a. Figure 54 p.299, b. Figure 64 p.327).

Now I resume the narrative. At mid-morning, a great many *ardwa andidja* were at the *Gurlanda ngundya*. I counted 48 but missed many others. It is my understanding that all of them participated in the remaining activities associated with the circumcision of 056♂DJ, but I did not even attempt the impossible task of keeping track of all of them.

When I arrived at BC1, ten men were making bullroarers for Mrs. Chalmers to sell to tourist shops in Alice Springs. By 1100, the group began to split up, with some of the men moving about fifty paces west to a previously unused area in the shade of a tree, henceforth known as BC2. At 1310, another business camp that I call BC3 formed south of DG4.

The activities that I describe in these paragraphs constituted a series of “one act plays”, each apparently an enactment or dramatization of a discrete Dreamtime event. All of them occurred at Business Camps BC1, BC2 and BC3 near DG4. Events at these BCs followed a general pattern. From the time each group began to work until its afternoon activities ended, the participants sang, applied paints and down to the bodies of selected dancers, and prepared *adnardunja* to use as instructional materials, all of which were done amidst quiet conversations about the Dreamings in question. Work proceeded concurrently at all three locations. When all was ready at one location, everyone congregated there, and the dancers performed briefly, usually in a kneeling position, carrying or wearing the *adnardunja*. After the presentation, the older men

formed an inner circle around the dancers and the decorated objects they used, and the younger men formed an irregular outer circle around them. The instructors briefly spoke to the ardwa andidja about the Dreaming, then dismantled the objects they had prepared that day or saved them for use that night.

Although membership in the groups at BC1, 2 and 3 was unstable, each had something like a core group of instructors and students. The following men, listed in descending age order, were elderly, senior or mature, except for one young man, 040♂JD, who was promoted 26 days later to a leadership position as “GARBUA-IN-TRAINING”. All of them served as core instructors:

- BC2 007♂WN, 012♂BT, 027♂JC, 113♂AM, 040♂JD
- BC3 001♂JA, 002♂BR, 008♂SW, 011♂ML, 023♂DM, 036♂BA
- BC1 004♂LP, 013♂JJ, 014♂JC, 021♂JH, 028♂DR

Although I took notes in strict chronological order, frequently moving from one location to another, I describe the events for each business camp separately and completely before moving to the next one. Since I discuss the events in the order in which the presentations occurred (BC2, BC3, BC1), the timings appear to be out of joint.

2.2.9.1. BC2. 080:1100-1530. Present a play with adnardunja. The group began a D02 grub Dreaming song, pausing frequently to talk and laugh. At 1200, 007♂WN arrived carrying a small can of water and a little suitcase (“toolbox”) that was so full it might have exploded. It contained an amazing assortment of objects, the most remarkable of which were two shell pendants related to D08 emu Dreaming (“It is like an egg”). Their inner surfaces had cloud-like natural markings that linked them to rain. During their afternoon presentation, the men used everything in the suitcase except the pendants.

- a small can full of white down
- some agailba
- skeins of hair string and wool string
- packages of red and black feathers from the black cockatoo
- bundles of twigs like those used earlier to make ♂056’s hat

At 1220 113♂AM completed an adnardunja resembling the beginnings of a huge bullroarer, a bit less than a meter long. 057♂SM attached tree leaves with wool and hair string, finally covering all but about 10 cm at one end of it. Several men used blood to attach red down along the two flat sides and white down on the thin edges. Someone attached an agailba to the bare end.

032♂BC attached a hair string to an ngunjaiyera small bullroarer, tied the other end to a 75 centimeter stick, and swung it for a while. The high-pitched sound was similar to that of a very large propeller-driven model airplane.

When they finished decorating the adnardunja, 007♂WN, 012♂BT, 113♂AM and some ardwa andidja began to attach red and white down to the bodies of 027♂JC and 040♂JD, as in Figure 2.1. Both wore the same design: a red "shawl" over the shoulders and across back and chest, and a red belt-like band around the abdomen above the navel, about eight inches wide. Both the shawl and the belt were outlined in white. A peaked stick hat like the one worn earlier by 056♂DJ on the night at DG3 was made on 027♂JC's head, and a skullcap was made on 040♂JD's head. Both were embellished with red and white down: top one-third white, bottom two-thirds red, a white band around the bottom extending down over their faces and the backs of their heads. When the hats were completed, an agailba was inserted into the back of 040♂JD's hat and the tall adnardunja was inserted into the top of 027♂JC's. The men had problems with making the adnardunja stay balanced in the hat, and someone held it upright for most of the time it was there.

At 1503, following a change in song style, men from the other business camps came to BC2. The core members who sang there were 012♂BT, 013♂JJ, 014♂JC, 004♂LP, 019♂SM and 057♂SM. 027♂JC and 040♂JD kneeled in tandem with 027♂JC in front, in a straight-up posture, both of them holding two handfuls of leafy boughs. As the singing continued, they moved forward, slowly, inches at a time, until a song ended. Then they shook their bodies all over, with the shaking seemingly "focused" at the shoulders. When they finished three songs, it ended. They had moved a lot less than a meter. Preparations required three hours and fifty-three minutes, plus the time 113♂AM spent in decorating the adnardunja before I arrived, but once again the performance finished in four minutes.

The core members from all three song circles sat in a circle around the hats and the adnardunja that had been removed from the performers as soon as the third song ended. The adnardunja was identified as D04 jaba alinya grub Dreaming. 027♂JC and 012♂BT were its principal bosses. After 027♂JC's death, 040♂JD would replace him in that role. As the down was being removed from the performers and replaced in the can from which it came, the core members sang and taught the young men about the Dreaming. The teaching was brief, and the circle broke up at 1515. The objects were taken apart and all of their components replaced in their respective containers. 005♂FM dismantled the adnardunja and 007♂WN took care of the hats. 007♂WN's short term memory was frequently impaired, but his long term memory and his role as garbuda seemed to be fully intact.

2.2.9.2. BC3. 080:1350-1700. Present a play with adnardunja. When I arrived, 036♂BA was making an adnardunja identified as the D14 ABMALBENGA lizard Dreaming, about the same length as the one at BC2, but round rather than flat. It was covered with a different kind of leaves, and an emu feather agailba was attached to its upper end. The pole was supported horizontally above the ground by a Y-shaped stick at each end, and it was rotated like a rotisserie as alternating red and white longitudinal stripes were applied. Chants ending with a tongue whir accompanied the attachment of the down.

At 1545 when the adnardunja was ready, 031♂MN dug a hole nearby and stood it up there. Then he, 039♂KR, 048♂SR and a visitor removed their shirts and several people attached red and white down to their heads and upper bodies. The very elderly 002♂BR made a hat for 031♂MN, in the same design as the hats for 027♂JC and 056♂DJ, then put his pants on when he finished making the hat. Shortly before 1630, the adnardunja was set into the hat on 031♂MN's head. Again balancing it was difficult.

The dance began immediately and lasted five minutes. It was done with the same kneeling posture and motions as the one at BC2, but the arrangement of the dancers on the ground was different. The first three songs were done with the men forming a square, facing inwards; the second three were done with them in single file. When the dance ended at 1635, 001♂JA and 002♂BR delivered something that looked and sounded just like a professorial lecture concerning the adnardunja that had been removed when the last song ended. The objects were disassembled immediately and their valuable components put back into their containers.

2.2.9.3. BC1. 080:1230-1730. Present a play with shields. 013♂JJ cleaned four shields that were used earlier at DG3, washed the paint stone, and piled sand around it to keep the paint and water mixture from running onto the ground. As the day proceeded, he painted the shields with alternating longitudinal red and white stripes, and covered the red stripes with red down. Two shields called the “big ones” had seven down-covered stripes; the other two, called the “little ones”, had ten stripes. They were for a D17 possum Dreaming that 004♂LP bossed. After the performance at BC3, everyone moved to BC1 where 013♂JJ, 014♂JC and 004♂LP sang five songs, talked about the shields, and finished their part of the day's activities in seven minutes. 027♂JC concluded by saying to me, "I look after him in two places - CDK and C44." In comparison with some other events at Business Camps, this one was remarkably quiet, low key and calm. The significance of D17 possum Dreaming here is unknown to me.

2.2.10. DG4. 080:1800-2000 . e30AA/c15AA/c10away/c8AA. Present a fire dance. This evening's events, again featuring fire, were extraordinarily complex. They began when 1444♂ST's Land Rover fetched 056♂DJ, accompanied by a huge mob of ardwa andidja, from

DG2 where they had spent the day “WORKING HIM UP”.¹⁴ The driver deposited them at a spot about 300 m west of the west end of the main dance ground.

As women began to move toward DG4, 112♂JB lit a fire on each of the fire mounds. People arrived quickly - both young and old - and seated themselves between the windbreak and the line of fires at the east end of the dance ground. Others approached from the northeast, and stopped and seated themselves about 400 m east of the windbreak.

031♂MN, 055♂DL and 039♂KR moved to the west fire and shouted toward the west where 056♂DJ and his escorts were waiting. About seven minutes after 031♂MN shouted, answering shouts came from the west, and the mob of women and children stood and began to approach the dance ground from the east.

At 1800, a large group of women and children, plus a smaller group of women only, reached the dance ground from the northeast. Many men were already seated between the line of fires and the windbreak at the east end. The large group of women and children went directly to the cleared area just west of the fire line. The small group containing 168♀DJ, 158♀RM, 163♀TH and 161♀MM first went to the south side of the back of the windbreak and struck the back of the windbreak with long leafy limbs as they walked to the area where the other women were standing. Their striking the windbreak was accompanied by their making a hooting whir sound. As soon as they joined the other women they raised their arms upward at a 45 degree angle, began bouncing them up and down a bit in time with the men's singing, and emitted a barking noise until that song ended. Then all of them stood quietly awaiting the next event.

Simultaneously a group of about fifteen ardwa andidja emerged from behind the sand hill west of the west end of DG4 and approached the west fire. They were about 200 m away when I noticed them. 031♂MN and 057♂SM were at the west fire shouting in loud and very high pitched voices when the young men appeared. As the young men approached closer, it was possible to hear answering shouts coming from them. The approach and the shouting took about seven minutes.

Most of the ardwa andidja wore narrow white headbands; 053♂WC, at the head of the group, wore a red band; two of them carried sticks held securely across their shoulders and they were running slowly in circles around the approaching group. 056♂DJ was in the middle of the group wearing the hairstring belt put on him two days earlier, and a new set of body paints. The red and white design had two parts: a large set of two concentric red circles on the lower chest and lower back connected by a red band around the waist, all out-lined in white, plus two sets of two concentric red circles on the shoulders, again outlined in white.

¹⁴ I never saw anything called “working him up”, so I cannot define that expression.

When the group arrived at the west fire, 036♂BA knelt down at the west side of the fire and 056♂DJ sat on his shoulders, one leg over each shoulder. 057♂SM led the way, 036♂BA carried 056♂DJ, and all of the other young men accompanied them. They went down the middle of the road to the fire line in the east, then to the south and around the back of the windbreak and back to the north fire on the fire line. As 036♂BA put 056♂DJ down on the ground in a standing position, someone handed him a stick and he put it across his shoulders. 056♂DJ faced the west, looking down toward the ground, as 168♀DJ, 158♀RM, 163♀TH and 161♀MM approached him from behind and rubbed their breasts firmly against his back, smearing the body paints on his shoulders. At that point, the women and children left the dance ground for a while.

When the crowd arrived at the DG, someone was carrying two small billycans full of tea and two loaves of bread made in camp ovens. I think the tea containers were a gallon each; one of the loaves was large - maybe 40 cm across by 10 cm thick - and the other was about half that size. Now their significance became apparent.

After the women left, 057♂SM held 056♂DJ's left wrist and led him to the west fire. 112♂JB carried the small loaf of bread and one container of tea to the same place. They were accompanied by about ten little boys (AWAYA) under ten years old, who sat down at the end of the road directly behind where 056♂DJ was seated facing west over the west fire. 028♂DR, the man who built the dance ground, talked with them briefly and they all joined in eating the bread and drinking the tea. Meanwhile, at the southeastern fire all of the ardwa andidja who escorted 056♂DJ onto the dance ground were eating the bread and tea left there. The food was provided by 056♂DJ's mothers. It seemed to be more important symbolically than nutritionally: the quantity provided was not very large considering the number of people who ate from it, yet very little of the bread was consumed - it was broken and mutilated almost beyond recognition, but it was not eaten. The tea, however, appeared to be drunk, everyone drinking from the containers in which it was delivered.

After the bread and tea were served, the ardwa andidja left the dance ground and went to the ngundy. 056♂DJ and the awaya stayed at the west fire, some of the men stayed at the east fires, and some of the men joined some of the women in temporary camps set up a bit over a hundred meters north of the dance ground. 168♀DJ and 013♂JJ were at one, and 112♂JB, 151♀JM and 158♀RM were at another.

At 1900, a large pile of small flat pieces of bark from an unknown tree was taken to the fire at the west end. The awaya chewed at them for a while, working them into shapes approximating that of a bullroarer but with a concave side where the bark was removed from the tree. After they had the desired shape, their ends were put into the fire.

At 1915, the men and women who had been in the temporary camps returned to the dance ground and began to sing and dance/bark in the same relative positions as on the preceding night. Fifteen minutes later, 112♂JB cleared a hole through the back of the windbreak behind the male singers and thirty seconds later I heard a loud shout from the people at the west fire. As the next few songs ended, the shout was repeated after each. After several repetitions of this sequence, the women began to reply to the shout with one of their own. This resulted in laughter all around.

At the west fire, 028♂DR unwound the hair string belt from around 056♂DJ's waist. As soon as it was removed, the little boys took glowing sticks from the fire and threw them high into the air, arcing out from the west fire in the general direction of the east fires. As the boys threw the fire sticks, the east fires were extinguished and the west one flamed brightly. Immediately after the sticks went out, the west fire was extinguished and the southeast fire suddenly was rekindled, like spotlights flashing on and off.

The group at the west fire, including 056♂DJ, went down the road to the fire line at the east. At the same time about eight young men removed their shirts and crouched single file behind the windbreak in line with the hole that 112♂JB made in it. When 056♂DJ arrived at the east fires, he was thrown up into the air several times, first in a horizontal position and then in a vertical position. At each toss, the women made their hooting whir noise.

At the conclusion of the tossing, 170♀LL and 188♀AC led 056♂DJ from the dance ground moving northward. The other women and children stayed on the dance ground but moved away from the center of the road so the line of young men could pass from behind the windbreak, down the road to the west fire. While the young men were trotting down the road, large handfuls of spinifex were ignited by men at the east fires. The young men went to the west fire, went around it, and trotted back to the east fires holding their arms in a cops-and-robbers "hands up" position. When they arrived back at the east fire line they did a vigorous stomping dance on the spinifex fires, eventually extinguishing them. The women and children departed immediately, heading back toward the main Gurlanda camp.

With the women and children gone, 038♂FJ moved off to the south side of the dance ground and swung a large gornaidja several times. As its sound faded out, 031♂MN began to shout in an excellent imitation of the bullroarer, and other men resumed their singing which had terminated several minutes earlier.

The departing women escorted 056♂DJ to a place about 150 m north of the east end of the dance ground. 170♀LL and 188♀AC sat down with 056♂DJ to "mind him". A little way to the southeast of them was the spot where 013♂JJ and 168♀DJ were camped, and about 30 m north

of them was a tiny camp where 027♂JC “sat down” for a while. At 2000, most of the other women and children went home and all action ceased.

It was an awesome display of highly coordinated mobility, singing and intricately choreographed dancing at times embedded in a fireworks display, performed by close to 200 males and females ranging in age from zero to eighty-four years. To the best of my knowledge, nobody functioned as an overall director of this extraordinarily complex, dispersed, professionally executed program; rather, it seemed to simply unfold with a degree of precision that suggested extensive training and practice spanning years, decades or centuries, all done “the proper Alyawarra way”.

Begin Day081

On Day 80, I was at DG4 from 1800 to 2000, slept for about six hours, and was at DG4 again on Day 81 from 0200 until 0630. I was told that nothing significant would occur during the six hours while I was asleep, and I am confident that the information was correct. The men were determined to have me see everything that they considered worthy of recording: they directed me to each new activity in time for me to see all of it and awoke me as needed to see special events, etc. Things that I might have missed were described to me, and during subsequent weeks I attempted to see things I missed by attending performances for other boys’ transitions to manhood. I certainly did not see and record everything, but I got a very high percentage of it.

2.2.11. DG4. 081:0200-0630. c7. Rehearse agailba dance. The women and children had returned to their accustomed places on the dance ground. 056♂DJ was seated at the west fire facing west, and had a small puff of down attached to the top of his head like that worn by 170♀LL and 188♀AC since it was attached to them early one morning. 170♀LL and 188♀AC were the only ones dancing when I arrived.

A moment later, 112♂JB led 056♂DJ to the east fires and "delivered" him to 170♀LL and 188♀AC who immediately escorted him to a place about 100 m east of the east end of the road and in line with the road. All of them sat down facing eastward, 170♀LL and 188♀AC sitting side-by-side behind 056♂DJ. Someone back at the dance ground swung the gornaidja again for about half a minute. Blankets were spread on the ground beside 056♂DJ and his wife’s mothers 170♀LL and 188♀AC. His mothers 168♀DJ and 158♀RM sat down on a blanket behind them. Small fires were built a couple of meters to the north and south of that group and other women and children sat down beside them. The groups of people at the side fires included 236♀JJ, genetic yZ of 056♂DJ; plus 173♀MM, 196♀KM, 218♀AM, 207♀LM, all members of 026♂BM's family; plus 152♀RM, 204♀DM, 166♀CM and 189♀GL, 210♀ER, all closely

related to 009♂BM. By 0215 everyone in this group had settled down to wait for sunrise. During the coming hours, many of them slept, awaking only to add fuel to the warming fires.

Meanwhile, 112♂JB was busy marking the backs of the seven ardwa andidja who would dance with the tall leafy poles on the final night. Two stripes, like the two made in the sand at DG3, were made to identify the men as "prisoners". The gornadija was swung while this was happening, and the men made the vocalized tongue whir sound as well. All activity ended by 0230 except for the incessant singing.

I heard the sound of the gornadija again at 0530. It was repeated several times and the men shouted something to the women who replied with a shout. Everyone laughed.

At 0607, the men began a song that I heard first at DG3 when 112♂JB danced with the large emu feather agailba. This time 112♂JB stuck the agailba into the back of the belt of one of the young men who immediately performed the prancing dance off to the northeast, throwing a handful of sand into the air at the turning point, and returning to the east fires via the middle of the road. The first time I saw the dance 112♂JB introduced it and two other men performed it separately; on this occasion six men did it separately. Three pranced off to the north of the road, two to the south, and the sixth used the north route again.

The first five all did the same thing. They crossed their arms on their chests and clenched their hands full of sand, which they concealed in their armpits until the moment when they threw the sand up behind them. As they pranced back to the starting point, they had their left hands on their left hips and right hands at their chins, and both elbows were fully extended to their sides.

032♂BC, the last man to perform it during this session, did something significantly different. After 112♂JB stuck the agailba under his belt, 028♂DR picked up a very long-bladed pocket knife, opened it, and placed the handle cross-wise in 032♂BC's mouth. 032♂BC then held his arms straight out from his shoulders, opened his hands as far as possible, and bent his fingers backwards and upward. He pulled his head down and thrust it far forward, went into a tense crouch, and did the same basic running, prancing dance as the other men. But the music was different too.

The same song always accompanied the dance, but it was sung without the dance as well. It was sung softly or loudly, and the effect of changing the volume and style was really striking. When it was sung without dancing, it was done softly and gradually faded away. Ordinarily when it accompanied the prancing dance, it was done at an intermediate volume level and terminated abruptly when the dancer completed his run back to the song group. But the performance tonight was exceptional as we approached the circumcision: the song was shouted, in perfect time and

perfect pitch. 032♂BC was a tall and powerfully built man, and his vigorous, almost violent, but incredibly graceful performance of that dance with the knife in his mouth was both beautiful and terrifying to me as a naïve observer.

As soon as 032♂BC returned to the song circle at the east fires, the men shouted to the women at the place where they had been all night, and the women stood up. The men who did the prancing dance knelt down for a moment and did a brief stomping dance beside the fires. Someone extinguished the two outer fires and the center fire at the east end of the road, and the lone fire at the west end blazed brightly. When this happened, all of the women and children left 056♂DJ and returned to Gurlanda camp.

056♂DJ arose alone and walked about 200 yards south of the east fires and sat down to wait for his breakfast which was provided by his mother and delivered by his brothers. The morning's activities ended at 0630.

This single, tightly choreographed scene 2.2.11, following themes established in several previous sessions, stood in striking contrast with the enormous, sprawling scene 2.2.10 that immediately preceded it.

2.2.12. BC1,4. 081:1520-1715 . Rest. At noon I went to the business camps to see what was happening and found more objects being prepared as was done yesterday. BC2 and BC3 were empty but BC1 and a new BC4 were in use. I had to get some rest, so I retreated to the tent for a while and returned at 1520 to see the action, first at BC1 then at BC4.

2.2.12.1. BC1. Present adnardunja performance. 028♂DR was the sole performer at BC1, and he wore the only object made for the performance. That object was a crescent or U-shaped cylindrical adnardunja about four feet long, covered with leaves and string. Red-black feathers from the black cockatoo were attached to both ends, and alternating stripes of red and white down were attached longitudinally the full length of the curved pole. 028♂DR's body was painted red from the waist up, red paint and red down were attached next, and he wore a hair string headband. Two Y-shaped sticks attached the adnardunja to his head in an upright U-position through the headband.

After 004♂LP gave him some instructions, 028♂DR ran in a peculiar fashion south to the road at DG4, turning his head and bending his body as if he was looking for something, then returned to the circle. The rest of the men sang two songs while he did the pantomime-like dance, and it was all over in less than a minute. The adnardunja was associated with the D17 possum dreaming that 004♂LP bossed, and the core members of the group were 004♂LP, 041♂RP, 028♂DR, 014♂JC,

021♂JH, 004♂LP gave the lecture after the performance, then everyone went to BC4 for the next event.

2.2.12.2.1. BC4. Dance with adnardunja. When I visited BC4 at midday, five adnardunja and three shields were being prepared. They were to be used in two semi-independent performances staged there later in the afternoon. Preparations for the two events were done side-by-side and simultaneously.

019♂SM, 113♂AM and 002♂BR decorated the adnardunja which were less than a meter long, and a centimeter in diameter, wrapped with leaves and hair string in the same fashion as all the others. A large handful of black-red cockatoo feathers attached to each end made each construction about four feet long. After they were wrapped, the poles were set onto Y-shaped supports and rotated over and over as they were covered completely with red down. At each end of the adnardunja, white down was attached in a band around the base of the feathers, and another white band went on the tips of the feathers.

When the adnardunja were finished, five men made twig hats in the style used on previous days, one on the head of each performer. But just before the hats were completed, an adnardunja was placed through the top of each one parallel with the ground (i.e., horizontally rather than vertically as in earlier instances) and lacing up proceeded apace. Down was attached to the front of each hat in a narrow band to the tip of the nose, and stripes of it were attached to biceps and across the abdomen.

A sixth performer was 002♂BR who also participated in preparing the poles. 057♂SM made a standard hat for him, but did not insert a pole. Instead, when the hat was completed and covered with the same red down as that used on the other five, more cockatoo feathers were called for. Some of them were inserted into the top of the hat more-or-less vertically, but many of them were inserted around the lower edge of the hat with the pointed ends of the shafts sticking upward at a 45 degree angle relative to the horizontal. Down was attached to and below the chin, covering the face and all of the head.

The dance that followed at 1620 was exceptional in every regard. After giving a few brief instructions to the five men with poles through their hats, 112♂JB began to hit a music stick and a boomerang together at three second intervals and continued as the five men walked about 75 m to the southeast and knelt down together. 112♂JB went out there to talk with them briefly and returned to the song circle. Chanting began and 002♂BR, who had not moved to this time, pranced off to the east, stopped several m north of the other five, looked around as if trying to find something, did a set of foot movements that you might call a dance which lasted about five seconds, and returned to the song circle as everyone else laughed loudly. Immediately, he

removed his hat and sat down. 002♂BR's "searching" actions in this performance were similar to those by 028♂DR at BC1 a few minutes earlier.

When 002♂BR finished, the other five men stood and began to prance back toward the song circle, twisting their bodies and arms into strange postures while holding four foot long sticks that must have been placed out there before they went to the spot from which the return began. Several times, they froze in twisted postures and held the positions for perhaps five seconds, bodies twisted, heads turned and pulled far back, feet in unnatural positions. Then with back-and-forth, left-to-right twisting of the sticks they moved forward again until they reached the Business Camp. They looked like they would have been right at home in some Southeast Asian religious sculpture and totally unlike anything else that I've seen here. Perhaps their postures were greatly exaggerated versions of the "searching" actions displayed earlier by 028♂DR and 002♂BR. Again the performance was followed by a brief teaching session. And it ended, gulluh.

2.2.12.2.2. BC4. c27. Sink into the sand. Concurrently but separately, 013♂JJ was preparing one D03 grub Dreaming shield, while 112♂JB and 040♂JD were preparing two D01 kangaroo Dreaming shields. All were for sites belonging to C38. 112♂JB and 040♂JD painted the D01 kangaroo shields on the front side only as is usual, but 013♂JJ painted the D03 jaba oodnuringaida grub shield on front and back. After confirming the standard red matte undercoating, he worked on the convex side first, beginning with two sets of five bright yellow concentric circles representing places where D03 grub sank into the sand at the end of its travels. Separating the sets of circles, he added a band of seven narrow straight lines perpendicular to the long axis, and in the remaining space he inserted curved yellow D03 grub symbols at each end. Then he turned the shield over and applied the same basic patterns to the concave side. Next he outlined all of the D03 grub symbols with brilliant white dots. Finally he used rust-colored eagle down to outline the sets of circles and straight lines, and to highlight the center of each set of circles. From any direction, it was a brilliant work of art.

When the men completed the shields, 028♂DR made a hat for 013♂JJ who, by that time, had had a vest of alternating red-white down stripes attached to his chest and back and halfway down his biceps. With the hat in place, 037♂LJ began to attach red and white stripes of down from the top of the hat to the chin, eventually covering all of 013♂JJ's head. Somebody prepared a vertical adnardunja like those used the day before, but I was so fascinated by the D03 grub shield that I failed to notice who did it, which was one of the many hazards associated with collecting data unsystematically.

When the hat was finished and covered with down, 012♂BT made a fan-shaped depression in the sand and 013♂JJ moved into the 'handle'-end of it. Then 012♂BT, 027♂JC, 113♂AM and 019♂SM made the tongue whir sound over the adnardunja before it went into a vertical position

on 013♂JJ's head. They continued the sound as 013♂JJ, in the kneeling position, cut the air horizontally with his hands and pushed sand away from his legs precisely the way some animals bury themselves. The whirl alternated with shouts as 013♂JJ's motions continued. It was all over in ninety seconds. The Dreaming had descended back into the sand, a stunning dramatization of the fate of all the Dreamings.

I first saw that special movement while watching a frog that somebody brought to my tent. The small frog, called D13 mbwalega, literally screwed itself down into the sand. While sitting on the surface it used its hind legs as paddles to push sand outward from under its body just as 013♂JJ did. The synchronization of the kicks yielded a twisting motion that was always clockwise when viewed from above. Since each kick was deeper than the one before, the frog performed a helical clockwise rotation that screwed it down into the sand, rear-end first. With just a few kicks, it simply disappeared.

The adnardunja and the hat were removed, and 013♂JJ and 012♂BT chanted in a style previously identified as a song "to make them fat" - an increase chant. And that was all. No teaching session that time. Teaching was redundant when actions were self-explanatory.

The shields were not used during the performance at the BC, but were used that night at DG4. Specifically the D03 grub shield that 013♂JJ painted on both sides was like the one on which 056♂DJ would lie when he was circumcised, so it is likely that it was the most important shield design in the entire weeklong event.

At 1730, I went with 031♂MN, 037♂LJ, and a few others to the spot west of the west end of the road where 056♂DJ was being prepared for the last night of the ceremony. A red and black design was being painted onto his upper body. Seven pairs of ten-foot tall leaf-covered poles had been prepared and were ready for the evening's activities. The group there contained twenty-seven ardwa andidja and awaya.

2.2.13. DG4. 081:1800-2000. c7. Final rehearsal of circumcision. Near sunset, older men were sitting behind the east fire line. Women and children were standing in the bulb at the east end of the dance ground. 112♂JB, 031♂MN and 029♂WM were at the west fire shouting toward the approaching group of young men escorting 056♂DJ to the last night of his childhood. The men acting as escorts were carrying the tall leaf-encased poles prepared earlier in the day. As they came near the west fire, the same women as before raised their arms and bounced up and down while making the barking sound in time with the music. Their movements and sounds ended when the young men reached the west fire. The men's singing continued.

As soon as they arrived at the west fire, the escorts stepped back from 056♂DJ and 031♂MN, 037♂LJ and a third unidentified person carried 056♂DJ face-down, prone position, to the east end of the dance ground. The ardwa andidja followed. 056♂DJ passed directly over the coals of the center fire and was placed face down, eyes covered, on a blanket. 012♂BT and 007♂WN lay down on the blanket with him, one on each side. Then another blanket was placed on top of all of them. The two kangaroo Dreaming shields prepared earlier in the day were beneath their heads like pillows. 012♂BT and 007♂WN were his wife's brothers who were there to "take care of him". They fed him his bread and tea because "the prisoner" could not do it for himself. 021♂JH aided in the feeding while 007♂WN kept 056♂DJ's eyes covered.

When 056♂DJ was in place, many of the men and all of the women and children departed. Most returned to Gurlanda for dinner, but a few went to the place where the women took care of 056♂DJ the night before. 168♀DJ, 158♀RM, 163♀TH and 170♀LL knelt down on the sand, faces to the ground, at the conclusion of a very brief dance that they did beside a small billycan and flour sack. 112♂JB approached them as they knelt and hit the ground very hard with a large stick and the women arose and moved another hundred yards west to the place where they were to spend the night in a large windbreak built specially for the occasion.

All of this action occurred in the fifteen minutes after my arrival at 1800. After a pause of about an hour, women reassembled at the east end of the dance ground. 056♂DJ sat up with his eyes open and uncovered. 012♂BT sat beside him on his left, 188♀AC and 158♀RM sat in single file behind him, 170♀LL and 168♀DJ sat in single file behind 012♂BT, 161♀MM and 163♀TH sat beside 168♀DJ.

Meanwhile, several men were busy tying the tall leafy poles to the legs of seven young men. As soon as the poles were secured, the older men gave a loud shout and the men with poles attached moved one by one onto the hard surface of the KEREDA, the very hard, flattened base where a termite mound sat in the past. The men jumped up and down vigorously, making the leaves shake violently, and 028♂DR and 039♂KR struck the leaves with large sticks knocking several clumps of them to the ground. At the conclusion of the dance, the tall poles were detached from the men and allowed to fall to the ground. 056♂DJ lay back down and all of the women left DG4.

A few minutes later, 031♂MN, 112♂JB, and 028♂DR pulled up the bottom half of the blanket covering 056♂DJ and shouted toward his genitals. 056♂DJ sat up momentarily and lay back down. The blanket was pulled up again and 029♂WM, standing at 056♂DJ's feet, took the hand and arm of some of the ardwa andidja and made cutting motions in the air over 056♂DJ's legs and genitals. The side fires were blazing brightly but the center fire was extinguished. Then 029♂WM knelt at 056♂DJ's feet and, holding someone's arm, made the same cutting

movements, but that time the other man was holding the long-bladed pocket knife in his hand. Neither the hand nor the knife touched 056♂DJ. 031♂MN said: "We marked him from a long way off."

At the conclusion of the symbolic cutting, all fires were rekindled and the singing resumed. 037♂LJ went into the dark and swung the gornaidja bullroarer several times, and 031♂MN used one of the tall leafy poles to pound on the ground in time with the music. After 037♂LJ finished swinging the gornaidja, he stuck it upright into the sand beside the center fire.

At 2000, 031♂MN told me that nothing more would happen for several hours and suggested that I get some sleep.

Begin Day082

Act 2.3. Cut him.

Academic analogy 3. The boy was admitted to graduate school.

2.3.1. DG4. 082:0130-0630. c7. Circumcise him. The most conspicuous change that occurred while I was asleep was that six pairs of tall poles were planted securely in the long low mounds that bordered the road. They formed a corridor connecting the east and west fires. The other pair was lying across the east end of the road a few m west of the fire line.

A second important change was in the location and position of 056♂DJ. Instead of lying in line with the road, he was now lying perpendicular with it, but still in the same place on the ground, just east of the center fire. The blanket had been removed from beneath him, but one still was over him, covering him completely. He was facing the west fire, lying on his side with 029♂WM at his head and 055♂DL at his feet. His head rested on 029♂WM's knee. A meter or so behind 056♂DJ, the magnificent D02 grub Dreaming shield that 013♂JJ made earlier in the day was standing upright in the sand¹⁵. The brilliant yellow grub symbols flashed in the light from the fires.

When I went to sleep, the dance ground ended at the windbreak behind the east fires. When I returned at 0130, the windbreak had been moved about 3 m further east and a new set of fires built near where the older windbreak had been. The group of men singing at the three original

¹⁵ From a distance, the shield used to support 1177♂?? during his circumcision two months later appeared to be identical with the one used for 056♂DJ, a magnificent jaba oodneringaida grub design painted on both sides of the shield.

fires included 031♂MN, 037♂LJ, 002♂BR, 057♂SM, 112♂JB, 029♂WM, and 012♂BT. At the second and newer set of fires, the group included 013♂JJ, 008♂SW, 027♂JC, and 011♂ML.

Since 056♂DJ was a member of ngwariya section¹⁶ only members of NGWARIYA and BURLA sections - his own and his wife's sections - were allowed into the area surrounding the original fire line. The people at the new fires were members of KAMARA and PITJARA sections, therefore were members of his father's and mother's sections. From this point onward, 056♂DJ's own brothers and wife's brothers were in complete control while his father's brothers and mother's brothers were excluded from the action.

At 0200, the D03 grub shield was removed from its vertical position behind the center east fire, moved around to the west side of that fire, and laid down on its convex side, slightly north of the center line of the road, with its long axis perpendicular to the road. 028♂DR took a fold-up barber's razor out of his pocket, and he and 057♂SM spent a few minutes sharpening it on a belt. The two D01 kangaroo shields that served as "pillows" earlier in the evening lay side-by-side between the central fires on the eastern fire line.

At 0230, a large knife such as those ordinarily used in carving a kangaroo was placed very carefully in the D02 grub shield, aligned with the centerline of the shield just west of the shield's handle. Singing continued.

At 0410, someone moved the D02 grub shield a bit south until it was directly in line with the center of the road. Two long leafy poles that had been lying there were moved to the south of the road but left perpendicular with it.

At 0420, a small agailba was placed on the D02 grub shield just to the east of the handle, and 031♂MN relocated the shield just south of the road's center line.

At 0422, the chanting, which had become quite vigorous, came to a halt and did not resume for more than half an hour. Three young men moved to the west fire and restarted it. A while later, 113♂AM and 032♂BC arrived at the east fire line where 037♂LJ put them into special positions. 032♂BC was placed directly in front of 056♂DJ's still-concealed face, and 113♂AM was put in front of 056♂DJ's feet. Both men faced the west fire. While this was going on, 029♂WM, 055♂DL, and a third person took turns resting 056♂DJ's head on their thighs.

At 0500, the singing resumed, much softer than before. The songs had the same style, but they were sung softly and faded away faster than they had earlier in the evening. Someone told me

¹⁶ See section definitions in Figure 3.8.

that the men closest to 056♂DJ were whispering things to him, telling him never to fight with his brothers, to share with them, etc.

At 0525, 032♂BC moved away from his seat in front of 056♂DJ, and 037♂LJ immediately put 040♂JD in that place. Whispered conferences began among the men there and continued for a short time.

At 0535, 028♂DR placed an enormous emu feather *agailba* on the D02 grub shield, right in the middle between the smaller *agailba* and the carving knife. 057♂SM and 045♂JJ then began to prepare a new string for the *gornaidja* that had been used intermittently all night. The new string had perhaps half a dozen strands rather than a single strand, and the new hairstring was a bit less than a meter long as opposed to the ordinary length of about 2 m. When the new string was in place, 045♂JJ handed it to 028♂DR.

Everyone talked and laughed loudly as the ground between the fire line and the D02 grub shield was cleared of all debris and the two long poles were moved to the north end of the fire line. 028♂DR then moved into the darkness south of the dance ground and swung the *gornaidja* several times. With its very short string, the roar was much faster than before and its loudness suggested that it was being swung more forcefully than usual, producing a really fantastic deep roar for maximum protection from the evil in the Magellanic Clouds. As it ended, the men made the vocalized tongue whirring sound for the first time during this session. Then all of the fires were built up again: one at the west end, the three original ones at the east end, and the three new ones for the fathers and mother's brothers.

At 0600, the singing became very vigorous again like it was before the pause that began at 0422.

At 0602, 112♂JB carried a burning stick to the women's encampment far to the east of the dance ground and told the women to remain on the ground. It would be dangerous for them to stand up now. Then he returned to the song circle.

At 0607, as soon as 112♂JB returned, the final scene began. 112♂JB and 029♂WM threw a handful of sand apiece into both the north and south end fires. The song that accompanied the prancing dance with the dancers wearing *agailba* in their belts began again. This time, the huge *agailba* that had been lying on the D02 grub shield was worn sequentially by three different dancers.

The first to wear it was 037♂LJ, 056♂DJ's oldest full brother. His performance was of the "ordinary" variety. The second dancer was 040♂JD. His dance was ordinary, but when he

returned to the singers he removed the knife and the small *agailba* that were lying on the D02 grub shield.

The third performer was 032♂BC, the man who danced last on the previous night. When the huge *agailba* was in place under his belt, 028♂DR placed a razor between his teeth just as he placed the knife there before. 032♂BC's posture and gracefully violent performance were the same as on the previous night with one major exception. Again, the singing was more like shouting, but when 032♂BC entered the road to run back to the singers, the singing became nothing but shouting. Using violent hand and arm motions, all of the men told him to turn around and go to the west fire. He turned and ran the other way and stopped when he was on the west side of the fire.

031♂MN removed the blanket from 056♂DJ. Then 031♂MN, 112♂JB, 037♂LJ, and 045♂JJ carried 056♂DJ between them to the west fire, head first and face down. When they arrived there, 040♂JD and 050♂HL were standing bent over on the east side of the fire with their backs to it. The spectacular D03 grub shield was lying across their shoulders. 056♂DJ was lifted high and laid in the upturned shield, head to the south. 029♂WM and 112♂JB held his feet and 031♂MN held his shoulders. All of the men who had been at the original east fire line surrounded them. Fathers and mother's brothers remained at the new east fire line.

With 056♂DJ held in place, 112♂JB inflated the foreskin like a balloon. A fire blazed behind the two men who were functioning as the table, but it provided little light for the men performing the circumcision. 113♂AM made the first cut with the razor, and someone lit a match for 112♂JB to inspect it. 113♂AM made a second cut. 112♂JB inspected it again, and said it was complete. 056♂DJ made no sound during the operation.

056♂DJ was lowered to his feet, staggered a bit, and was made to stomp his feet two or three times. With his full brothers 037♂LJ and 045♂JJ holding his arms to support him, he walked in a procession to the east fires followed by everyone who was at the west fire. His brothers took him beyond the original fire line directly to his own father, 013♂JJ, and tried to get 013♂JJ to look at the circumcised penis. 013♂JJ refused to raise his eyes from the ground, so the classificatory fathers and the mother's brothers were told to look at the penis. They too refused.

037♂LJ and 045♂JJ turned 056♂DJ around to face west. 029♂WM helped to hold him up and told him verbally and with gestures to look to the west, to the place where they made him a young man. 056♂DJ looked westward, and then was placed in a sitting position on the shoulders of 031♂MN. He appeared to be nearly unconscious at that time, and 037♂LJ and 029♂WM stabilized him on 031♂MN's shoulders as 031♂MN carried him about 200 m south of the east fires. 112♂JB led the way carrying a glowing stick in his hand. When they arrived beside a large

bush surrounded by spinifex clumps, 031♂MN put 056♂DJ down on his feet and the young man walked alone. He was led nearer the bush and a spinifex clump was ignited to provide a brilliant light for a good examination of the cut. 037♂LJ announced that it was finished, that it was a “good one”.

037♂LJ told me there was more to see at DG4. As we returned there, I heard shouts coming from the direction of the women’s camp. Five women were approaching the dance ground: 158♀RM and 161♀MM side by side followed by 188♀AC and 168♀DJ side by side. 158♀RM moved a few meters away from the group making most of the hooting whir sounds. They were carrying white rags in their right hands.

At the west fire, the seven ardwa andidja who had carried the long poles were standing in a circle around the fire with their arms stretched straight up, snapping their fingers. The women rubbed them on the backs with the white cloths and then ran down the road to the east fire. Behind the center fire, they got down onto their knees and put their faces down to the sand, did something else that I couldn't make out, stood up making the hooting whir again, and departed toward the east. They were the only people at the east fire at that time - the men had moved off about 20 m to the north of the dance ground and did not return to it.

At 0630, the young men at the west fire ran down the road and formed a kneeling line parallel with the fire line. 037♂LJ picked up a long leaf-covered pole that had been left there and touched the backs of the kneeling men with it. They arose, and the event ended: gulluh. Fragments of dawn broke through dark clouds as people dispersed across the sandhills, setting fire to spinifex tussocks here and there to light their way home.

Act 2.4. Heal him.

On the day of 056♂DJ’s circumcision, he was taken to a new ngundya 530 meters away from the Gurlanda ngundya. There his wound began to heal. His father took me to visit him eight days later, by which time 067♂JL, the young man who was circumcised second, had joined him there. Their mothers prepared food for them, and their brothers or fathers delivered it to them. They would not be allowed to leave the ngundya until their wounds healed.

It is my impression, based on scanty comparative data, that the overall sequence of events described in these paragraphs was standardized, predictable and repetitive, but that the contents of those events were tailored to fit a particular Dreaming, a particular site or a particular boy. But the boys who experienced this dramatic series of events, regardless of variations from person to person, learned a great deal from the transformation that all Alyawarra men experienced in

conjunction with circumcisions. Nevertheless, the vast majority of their learning about the Dreamings occurred in the months and years after their wounds healed.

The last of eight boys to be circumcised at or near Gurlanda camp in 1971-72 was captured on Day 167 (21 Nov 71) ; i.e., the circumcision “season” at Gurlanda spanned approximately 90 days from the cool of early August to the heat of late November, but it continued elsewhere. For example, the Chalmers family took fifty-five members of the research population (not including anyone who resided at Gurlanda camp) to Alice Springs on 12 January, from which those people took a bus to Santa Theresa Mission to attend a series of circumcisions spanning about four weeks. It was 409 km from Gurlanda to Santa Theresa.

Act 3. Teach him at business camps.

Academic analogy #4. The young man as a student attended lectures and demonstrations.

On the day following 056♂DJ’s circumcision, older men continued to play key roles as teachers in training sessions conducted at business camps. The students were young men who were circumcised at some earlier time. They lived at or near Gurlanda camp, or were visitors from other camps. Since 056♂DJ was absent, the training sessions began without him, but he joined the others after his wound healed. Women who had played such conspicuous roles in the past ceased to be actively involved in training the young men.

Each day’s teaching session began at mid-morning or early afternoon when men - teachers and students - assembled at a business camp. They painted new designs on shields, sometimes made sand paintings on kerede, the flattened bases of termite mounds, rarely used hundreds of meters of human hair string to weave a waninga. Almost always they made adnardunja decorated objects, freestanding or attached to the bodies of men. Designs were painted on men’s bodies and down was attached to their outlines with a mixture of blood and water. These spectacular and remarkably diverse displays of artistic replication from memory constituted a representation of one specific Dreaming, and of one specific event in which it participated in the Dreamtime.

The entire process by which these designs were constructed was accompanied by accounts of the Dreamtime events being depicted, discussions of the work in progress, and questions asked by younger men that were answered by older ones sometimes as simple statements, sometimes as narrative texts, sometimes as chants.

Divisions of labor were clear. The garbuda or senior boss of the Dreaming was in charge of theoretical matters such as the Dreaming’s travels, kin relations, etc. The kurtungurla or senior manager was in charge of practical and logistical matters such as firewood, paints, hair string,

schedules, etc. A mature man and perhaps three or four younger men were designated to perform the main instructional dance near the end of the session and were duly embellished with multimedia designs and *adnardunja* appropriate for that performance. Other young, mature and elderly men served as “personal assistants” who applied body paints, eagle down, and other embellishments such as twig hats to the designated performers, always learning as they worked. All of them became part of the audience when the performance occurred.

Young men who were descendants of the Dreaming to be studied during a session were particularly responsible for learning in detail whatever was taught so that they might someday be promoted from their junior status (*ardwa andidja*) to more senior positions, perhaps to become *garbuda*¹⁷, head of that Dreaming. Some other young men, descendants of other Dreamings, were responsible for learning what they might need to know as managers of that Dreaming, or as replacements in the rare event that all of the “owners” of the Dreaming died and someone from another Dreaming assumed the responsibilities of an elder member of the depopulated Dreaming.¹⁸ I suggest that there was no place in this intensive, all-encompassing program of graduate training for a young man who was unable or unwilling to master the theory and practice of the Dreamtime in so many of its facets and nuances.

During the week of 056♂DJ’s circumcision, I saw the teaching events described above utilizing shields and *adnardunja* crafted by Alyawarra men for one boy and two specific Dreamings. Although it was an extraordinarily complex event, it constituted a sample of size one. Much of anthropology is based on such tiny samples, but it is profoundly misleading to generalize from a sample of only one of anything. By introducing the following four vignettes of events associated closely or distantly with other circumcisions, I expand the sample size ever so slightly.

3.1. BC1. 094:n/a. Sand paintings. The main activity at BC1 centered on a magnificent sand painting, the first I’ve seen, for D07 NGWARLA YEREMBA ant Dreaming of C31; 026♂BM, 015♂BN bosses; painted by a team consisting of 026♂BM, 008♂SW, 015♂BN, 028♂DR, 011♂ML; colors: red, white, yellow. Initially I thought the design was a “nest” of concentric circles, but upon closer examination I discovered that it was a nest of spirals that corresponded to the motion of frogs sinking backwards into the sand and the symbolic version of that motion that the men used to show that a Dreaming was “finished”; i.e., the lines formed alternating concentric solid and dotted spirals descending toward the center of the painting. The figure was about a meter in diameter on a hard, flat *kereda*. It had a total of 46 intermixed yellow-solid, red-solid and white-dotted spirals. Then there were several outer circles consisting of dots in red, yellow, red, each dot being encircled with small white dots such as those used nearer the center

¹⁷ Spencer and Gillen (1899:9-11, 159, 645) called this person *alatunja* among the Aranda, but I did not hear that term among the Alyawarra.

¹⁸ This may have been a rare occurrence in the 18th century, but it was a serious threat in the 20th century.

of the figure. Breathtaking! Four shields were prepared and used in the dance and in the teaching session that followed. While the teaching session was in progress, I noticed 064♂SH and another ardwa andidja sitting in the back row playing cards, reminiscent of Senior English class.

The other business camp featured another brilliant sand painting in three dimensions. The hard surface of the kereda had a red painted background and a complex cluster of concentric circles of white dots. A large set in the center was surrounded by peripheral sets that were tied to the center by parallel lines of white dots. A small galah feather agailba stood in the center of each small circle, and a red-down covered adnardunja topped by a huge pink galah-feather agailba stood in the center of the large central circle. The circles alone would have been really impressive, but the addition of the third dimension made it a magnificent work of art, and it appears that making sand paintings in 2- and 3-dimensions constitutes a separate artistic genre such as making shields, making adnardunja and applying body paints. What other genre are there?

3.2. BC1. 103:n/a. WANINGA. At BC2, 013♂JJ and 029♂WM prepared a waninga, a wooden cross with a single twisted strand of human hair string spiraling inward from one corner to the center, connecting the four arms together in a continuous spiral. Spencer and Gillen (1899) said the waninga was common among the Aranda at the turn of the century and that it came from the south. This is the first one I have seen.

The vertical pole was about 2 m long, the horizontal one about 1.5 m long, and the cross point about 70 cm below the top of the vertical pole. If my guessed dimensions and my rough estimate of 4 strands of hair string to the centimeter are accurate, they used about 770 m of human hair string to make the square centered on the intersection of the two poles. Is that even possible?

After they attached the hair string, they covered the square with down: a white circle in the center, a white border a few cm wide all around, red everywhere else. The long handle was painted red and galah-feather agailba were attached to the upper corners. 029♂WM, 013♂JJ, 009♂BM, 039♂KR and 021♂JH decorated it, all of whom boss D01 kangaroo, the Dreaming that the waninga represented. 062♂SR bossed it too and he would get his first view of it when he was carried to the west fire for his circumcision. It would be standing just west of that fire mound at the end of the road. This D01 kangaroo Dreaming belonged to C38 and D01 kangaroo carried the waninga to C38 when he returned from the Petermann Ranges. Thus 013♂JJ agreed with Spencer and Gillen's informant who said the waninga migrated into Central Australia from the south (or southwest). Perhaps making waninga constitutes another artistic genre.

3.3. DG3. 121:n/a. Introduce children to their Dreamings. Teaching girls and boys about their Dreamings begins at a very early age. In the midst of the circumcisions, 005♂FM's daughter 265♀MM, about 18 months old, killed a D15 nyarla aluwaidyera lizard, but I don't know how. It

was her first "prey", and for that reason a formal teaching event was conducted to introduce her to one of her Dreamings. To the best of my knowledge the event co-occurred with the circumcisions but was not otherwise related to them.

All afternoon, several men of C44 worked on a 3 m tall adnardunja and two shields to use in the event just after dark. The adnardunja represented D26 numungera orange Dreaming, and the shields represented the same Dreaming plus the D10 orabilba bird Dreaming. All belonged to C44 with 001♂JA as garbuda. The adnardunja had black cockatoo feathers on top, pink down almost all over, and white down at the top and bottom of the cockatoo feathers. It was decorated with about ten galah-feather tassels attached to short sticks - like large match sticks - that were inserted into the pole's covering in a straight line down one side. When the pole was held up in the air parallel with the ground, the tassels formed a straight line of pendants. Another little stick held the tail of the dead lizard, wrapped in cloth and covered with down, and it too was attached to the large pole.

With all of the equipment prepared, 013♂JJ and 027♂JC carried the shields, 011♂ML wore the adnardunja attached to his body with two belts, 001♂JA and 012♂BT sang and hit boomerangs together to keep time, and two elderly women danced, 151♀JM and her daughter 161♀MN. The dance ground, which resembled a business camp, was a little spot about a hundred yards southwest of my tent. A small area maybe 3 x 6 m was cleared late in the afternoon, and at dark about fifty people assembled nearby, the women and children north of the cleared area, the men adjacent to the bare sand but on the south side of it. 005♂FM, carrying 265♀MM in his arms, stood between the two groups until the action began.

At that time, large spinifex fires were started northeast and northwest of the cleared area to provide illumination. With 001♂JA and 002♂BR singing and clapping the boomerangs, a procession including all of the women and children approached the cleared area, as did 005♂FM and his daughter 265♀MM, and the men began a shuffling dance. 031♂MN stayed on the centerline of the dance ground but 027♂JC and 013♂JJ alternated from left side to right, crossing in front of 031♂MN several times. They were holding the shields and rotating them 90 degrees in the same manner as the walbiya do it on the women's dance ground before a circumcision. 013♂JJ, 027♂JC, and 031♂MN faced north throughout the event, and 151♀JM and 161♀MM faced south toward the men, 161♀MM the daughter in front and 151♀JM her mother behind her. They danced forward, feet hardly leaving the ground, arms upraised toward the top of the pole that was attached to 031♂MN. After a couple of minutes of singing and dancing, all of the action ended and 005♂FM gave the tiny piece of lizard's tail to 265♀MM and helped her break it and throw it away.

Another similar event was held about three weeks later, again to introduce a child to one of its Dreamings. Everyone was invited, and a great time was had by all except the little boy (DK Id) who was distressed by being the star of the show. Just after dark, singing began at the ngundya where the event was held. After a few songs, 009♂BM was transformed into D01 kangaroo Dreaming by men using a huge adnardunja prepared earlier in the day: about 12 cm in diameter and 1.5 m long, covered in pink down, with ten vertical sticks covered in more down, similar to the pendants used in the earlier child's introduction. The entire enormous piece of art was placed on 009♂BM's head, attached horizontally with a belt and balanced by assistants. Other men attached down to two of his brothers who performed the roles of D18 dingo.

When all was ready, the D01 kangaroo lay down with much assistance and the two D18 dingo Dreamings disappeared into the darkness. 031♂MN started a fire for light, singing began, and the men who surrounded the D01 kangaroo Dreaming chased all the ordinary dogs away so they would not bite D01 kangaroo.

The D18 dingo Dreamings approached and attacked the D01 kangaroo Dreaming who, again with much assistance, stood up and began to dance toward the little boy as the D18 dingos encircled his feet and legs. D01 kangaroo held the down-covered tail of the D15 aluwaidjere lizard sticking out of his mouth. When he got close to the little boy, he gave the tail to the child who then broke it and threw it on the ground. And that was all. Everything was disassembled immediately. The two introductions were variations on a single theme.

3.4. BC5. 128-133:n/a. c5. Dancing at women's BC. During an extended interval before the 6th circumcision, the women of alugera-24 staged afternoon presentations featuring singing and dancing that were equivalent to men's presentations at the Business Camps. The principal performers were 168♀DJ, 170♀LL, 173♀MM and 188♀AC, all of them 35 to 48 years old, self-confident, married with children, actively participating in my work just as their husbands were. Notice that 168♀DJ was the mother of 056♂DJ, and 170♀LL and 188♀AC were the genetic sisters from C38 who were designated mothers of his anticipated future wives. Presumably these linkages connected the women's performances to the circumcision of 056♂DJ, but nobody explained that connection to me.

These performances occurred at what I call the Women's Business Camp, almost 200 m west of the tent, about as far outside of the main camp as the men's agiewa was before the beginning of the circumcisions. In addition to the four principal performers, the group at the alugera contained seven other women and a large mob of children, girls and boys, belonging to all of the women. Everybody found a bit of shade to sit in.

The women had become less reserved. The first time I saw them sing and dance at the women's BC, they remained fully clothed and wore no body paints. Then they lowered the top half of their dresses and wore body paints on shoulders and breasts. Finally they pulled the lower portion of their skirts high on their thighs and body paints were applied there as well. The singing was more-or-less continuous and everyone participated, but the style was far more lyrical than anything the women did earlier during preparations for the circumcision of 056♂DJ.

The four principal performers wore white bands around their heads, and all wore painted designs. 168♀DJ had horizontal red bars on each breast and each biceps, and red stripes reaching from shoulder to shoulder across the upper chest. 188♀AC had red bars reaching from the right shoulder to the nipple on the left breast and another set from left to right. The ones that began at the right shoulder continued all the way to the breast in an uninterrupted line, but the other set was "under" the first set. 170♀LL, 188♀AC's biological sister, had a similar design, but had alternating red and black bars everywhere that 188♀AC had only red ones. 173♀MM had about a dozen vertical red stripes on each breast and biceps, and half that many horizontal ones across the upper chest. All of the bars were outlined in white.

Nearby two painted WARDIDJA poles stood in the sand about a meter tall and about 3 m apart. Spencer and Gillen (1899:603) called them fighting clubs among the Aranda, but the Alyawarra in 1971 called them dancing poles, of a shape and size that could be used for multiple purposes in both societies. One had alternating red and white horizontal stripes, and the other had segmented vertical stripes in black and white on the standard red matte background.

Just before the dancing began, someone produced a handful of red strings made into loops ranging from one to two m in circumference. 168♀DJ, 173♀MM and 188♀AC chose loops of about two m in circumference, held the opposite ends of the loops in their hands in the manner of string figures, and went to the area adjacent to the poles. With arms extended and hands holding the cords, they did the same kind of bouncing or shuffling dance that they did in conjunction with the circumcisions. Their dance movements took them around the poles a few times, then back toward the audience and other singers with their feet never leaving the ground.

When I played the tape, 173♀MM identified the Dreaming songs as D25 pituri tobacco, D09 adedera parrot, D30 abuda rock or hill, D32 mwaidya water, D20 ndanga a seed and D01 aurha kangaroo. The designs were associated with D22 ilauwara seed site at Amaroo Station, and the dances with D09 adedera parrot Dreaming.

Dreamings featured the following day were associated with 173♀MM's Country at Warrabri, now known as Alekerenge (Anglicized as Ali Curung), near a major D18 ARENGA dingo Dreaming site at or just beyond the western margin of Alyawarra territory. The same women

performed, but the patterns of their body paints were somewhat different, and 170♀LL and 188♀AC wore agailba made of D31 angwena feathers. About 20 women were there, and the mob of children was proportionately larger. The oldest male was about five years old, and the females ranged from 2 to 60 years.

On the third and last day, only 173♀MM and 170♀LL wore body paints, but they and 188♀AC and 168♀DJ wore agailba, and the two wardidja poles had feathers attached to their tops too. The designs represented two Dreamings, D21 ngwaiyanga seed and D20 ndanga seed both from Warrabri and both dreamed by 170♀LL and 188♀AC. 112♂JB made the wardidya and 007♂WN and 008♂SW made the agailba from the feathers of four different kinds of birds and loaned them to the women for the dances related to these Dreamings.

During the few days when the women performed their dances, five ardwa andidja and two ardwa elgwa, 031♂MN and 113♂AM, as leaders staged a similar series of performances, wandering systematically about Gurlanda camp like Medieval European minstrels. Their Dreaming songs and body paints pertained to the D18 dingo Dreaming site at Alekerenge about which the women were singing. Several times the young men told me they were “doing it just for fun”, which may have meant that it was not linked to any of the circumcisions. But doing it “for fun” did not make it any less real or effective as a learning experience for the young men.

It was clear from my observations and Moyle’s (1986) recordings of women’s music at Ammaroo Station that the Alyawarra women had a rich musical and artistic tradition tied directly to the Dreamings, and that they shared it with their young children and their young men as well.

3.5. BC1. 106:n/a. Promote him to garbuda-in-training. During the series of circumcisions, on Day106, 026♂BM and 012♂BT, the main bosses of D21 ngwaiyanga abunga seed Dreaming of C15, promoted 040♂JD to a position as garbuda-in-training. A person inherited patrilineal membership in a Dreaming simply by being born into it; he became eligible for adult training in the Dreamings by maturing to puberty both physically and intellectually,¹⁹ he was admitted to “graduate school” and trained accordingly following his circumcision; he was promoted to a position of garbuda-in-training on the basis of educational criteria such as performance and achievements as an ardwa andidja; he became garbuda (head) when other junior bosses selected him to replace a garbuda who had died. I do not know whether the promotion of 040♂JD to junior boss occurred at this specific time by chance or by design, nor do I know anything about a similar linear ranking that may have existed among women.

¹⁹ A male in his late ‘teens or early twenties with physical and intellectual disabilities indicative of Down Syndrome briefly visited Gurlanda camp with his mother during the period of the circumcisions. Several men told me that he was still a boy (awaya) who could never be circumcised, but that everybody “took care of him”. Since it was impossible to “make him a man”, he was accepted at the alugera with his mother but not at the ngundy with men.

Act 4. Teach him at Dreaming sites.

Academic analogy #5. The young man participated in graduate level field work.

In Acts 1 through 3, dance ground and Business camp dramatizations and training sessions were conducted with a vast array of *aides-mémoire* in the form of meticulously carved and painted objects: shields, adnardunja, gornaidja, agailba, body paintings, sand paintings, Dreaming songs and texts, and so on indefinitely. The carved items were portable and durable but the paintings were ephemeral, created, used and erased in a day of intense labor, all based on events that occurred in the Dreamtime but never treated as physical products of the Dreamtime. They stood for, or pointed to, or replicated the Dreamtime, but they were a step or two away from the Dreamtime and the Dreamings themselves. Taking the last steps in Acts 4 and 5, the Alyawarra interacted directly with the Dreamings in several ways that I witnessed and many others that I did not.

Portable ALJERA²⁰. Just as ancestors moved across the continent in the Dreamtime, so too did many of them move in the 20th century. All were affiliated with specific Dreaming sites. Sometimes they moved from place to place when people relocated their camps. I call these “PORTABLE ALJERA” and describe them under this heading. Sometimes they did not move at all, or moved only to avoid white Australians who would damage or destroy them. I call these “STATIONARY ALJERA” and describe them under that heading below.

4.1. BC1. 095:n/a. C43. On Day095, 013♂JJ, garbuda of D03 jaba oodneringaida grub Dreaming of C43, and father of 056♂DJ, arrived at BC1 carrying a small parcel wrapped in a bag that contained a bowl-like carrying device called a COOLAMON with longitudinal channeling but no painted decorations; a large skein of hair string; and another package containing items identified as aljera, the physical remains of the Dreamings, the actual ancestors themselves from the early days. They were wrapped very carefully with thin pieces of bark separating adjacent pairs, each object carefully insulated with red down, and hair string used to secure the aljera-bark-down package. 028♂DR unwrapped most of the package while 013♂JJ, 007♂WN and 009♂BM chanted softly. Then 013♂JJ withdrew the small red bullroarer-shaped objects from within the inner-most layers of down. Black elliptical indentations appeared on both surfaces of them. They were unlike anything I had seen previously.

²⁰ Aljera is cognate with the Aranda term altjira which Elkin (1964) defines as “the sacred time and state symbolized by the alcheringa, the sacred objects [churinga] as categorized by Spencer and Gillen” (see Spencer and Gillen 1899:119-166). I use aljera (from the Aranda alcheringa or churinga) rather than angerdelungwa (from the Alyawarra) because it is easier for English-speaking readers to say. Traditionally these objects were sacred and secret, but for over a century they have been accessible in books, postcards and museums. Now they are ubiquitous on Wikipedia and elsewhere on the Internet.

013♂JJ used kinship reference terms to introduce the aljera to me in order of increasing size: his mother's mother, who was the only female in the group, and several genetic and classificatory fathers and father's fathers. All were D03 jaba oodneringaida grub Dreamings, the first associated with C43, the last and largest associated with C42. They were personal ancestors of a patrifamily and traveled with its garbuda whenever he moved to a new camp location. Thus the senior man in each family was directly responsible for keeping these aljera with him and taking care of them in perpetuity. Before he was circumcised, a boy learned genealogical relations, kinship terms, names of Dreamings and Countries; after he was circumcised, he learned how and why all of them fit together.

Handling the aljera was serious business. As 013♂JJ wrapped them after introducing them to me, he told me that he must not break any of them. If that were to happen, the person nearest to him would kill him immediately because he would be too dangerous to be left alive.

4.2. BC1. 101:n/a. C44 and C38. Six days later at BC1, 006♂TM showed me his familial aljera for D29 anaidya Dreaming, C44, and 112♂JB showed me his for D05 jaba ngurbiya grub Dreaming, of C38. There were variations among the three sets, but my description of 013♂JJ's seemed to fairly represent the genre.

4.3. BC1. 235:n/a. C44. On Day235, 001♂JA of C44 opened an aljera bundle at BC1 with 021♂JH assisting. It contained bullroarer-shaped stones, red and black with white down on one end of each, associated with D33 iyungwa night Dreaming. In addition, the bundle held a large collection of tools including agailba and skeins of wool yarn and hair string. I saw two other elderly men, 004♂LP and 007♂WN, each almost as old as 001♂JA, use similarly extensive tool kits to perform specific tasks on various occasions.

On the basis of no irrefutable evidence, I suspect that these portable family collections and toolkits had been inherited through the patriline since the early days of the Dreamtime and used in their current forms as part of the nomadic lifestyle for uncountable generations or centuries.

Stationary aljera. In addition to portable aljera distributed throughout the population and moving as needed, stationary aljera were located at originally fixed locations or had been moved to safer locations after the arrival of Europeans. The sandy landscape throughout the region was punctuated by the works of Dreamings in the early days, at dry riverbeds, soakages, waterholes, hills, rocky outcrops, small caves and other topographic features where they jumped up, traveled, paused briefly, or sank back down into the sand. But two centuries of white Australian vandalism resulted in necessary mobility among Dreamings that were never intended to move again. By the mid-20th century, ardwa andidja and their mentors visited the Countries and Dreaming sites

where those historical events occurred, not on pilgrimages but in a commitment to keep the universe from falling apart as it does in Reggio's *Koyaanisqatsi*.

Participants assembled at the ngundya in the morning, each group consisting of a few mature and senior men who were teachers, and as many young men as the operational vehicles would accommodate. They had been circumcised over a period of a decade or more, but ordinarily had never visited the selected Dreaming site.

These sorties entailed travel in my Land Rover and one or two other trucks to Dreaming sites in Figure 1.3, Zone 4. I observed instructional sessions at Dreaming sites scattered over an area of about 26,000 km² (10,000 miles²). Sometimes finding a site was difficult. Perhaps nobody had visited it for many years; the countryside everywhere was dry and brown; spinifex grass, scattered trees and low rocky hills contained no landmarks that I could see. We parked perhaps a hundred meters from a likely site and approached it quietly, respectfully, on foot and confirmed its identity. The level of excitement among the men was high.

Unlike man-made objects used in teaching sessions at business camps, aljera were left by the Dreamings in their present form – and ideally in their present location - when they sank back into the sand at the conclusion of their travels. 013♂JJ's dramatization of the frog's helical rotation that screwed it down into the sand was replicated in a stylized fashion by the men at each site where a Dreaming ended its travels by descending into the sand, i.e., where it was "finished". The motion took about one second to execute and had at least three components that happened more or less simultaneously; i.e., snapping two fingers on the right hand, pointing the right index finger down to the sand, and moving the right arm and hand in a downward clockwise spiral toward the Earth, but not all the way to the surface. Less than an hour after arriving at a site, we moved on to a different site or departed for Gurlanda camp.

Again I present vignettes that expand the sample size.

4.4. DS41. 083:n/a. C41. The day after 056♂DJ was circumcised, 009♂BM, 017♂AL, 028♂DR, 029♂WM, and 037♂LJ took me to a tiny rock cave that was camouflaged with limbs and additional rocks. The space was perhaps half a meter deep, a bit higher than that, and a meter wide. A nest of leafy limbs held bullroarer-shaped aljera that were covered with sand, mud and spider webs, and their paint was in poor condition. Someone said they had not been moved for a long time. Thus began my first visit with the Dreamings which, on that day, encompassed two major sites and six minor ones in two adjacent Countries.

028♂DR and 037♂LJ spread boughs in front of the cave. 009♂BM withdrew the aljera and handed them to the others who cleaned them and spread them on the boughs. They fit into one's

hand and felt like heavy polished stones but sounded like wood. They did not correspond to a single plant or animal “species” or “genus”, but belonged to five disparate Dreamings: D28 yerendena (plums), D13 mbwalenga (frogs), D16 nyarla (lizards), D24 mainyeru (seeds), D33 iyungwa (nights) all of whom were affiliated with that site. In the early days, the objects were kept at their proper location in 028♂DR’s Country, but they were moved to their present location years ago to prevent white Australians from stealing or destroying them.

During the painting, 028♂DR and a couple of others chanted occasionally in the style used at business camps to “make the Dreaming fat”; i.e., they were increase songs, slow, very soft, brief, like solemn whispers. 009♂BM remade the nest, carefully laid the objects onto the leaves like coins lying on their sides [////////], added new leaves to cover them, and replaced the large camouflage rocks leaving the location completely hidden. The men made it very clear that I must not reveal the location to anyone. When we left the site, I thought the day’s sortie had ended, but it had hardly begun.

The next stop was about 200 m from a depression at the top of a sand hill. About 20 meters in diameter, a meter deep and shaped like a huge bowl, it was a dance ground built in the early days but abandoned when whites Australians disrupted it. The aljera that belonged at this site were the ones we saw at the previous site.

Further along, two flat stones were surrounded by logs arranged to form a triangle perhaps a few meters on a side. They called it a “small yard” as the phrase might be used in conjunction with livestock, but the logs actually served two very different purposes. In the early days, a blind man died and was buried where the stones lay. Touching the stones would cause blindness, so the fence kept people out. On the other hand, the logs acted as a windbreak that kept death in. If the triangle were broken, wind would disperse death through the gap, for death was inherent in the stones; if the fence were removed, universal destruction would follow. A road grader had made a slash that barely missed the logs, but nobody seemed to be angry. Rather, they were just relieved that the white man, in his ignorance and arrogance, had not caused the destruction of all life.

We stopped near a red sand hill where two female D11 albaidya birds lived. Increase events held there would make young girls grow up. The men indicated by hand motions that large breasts were made there.

Finally we stopped at a soakage signified by a nearly invisible log projecting just above the sand. Two shallow depressions were on the bank near the channel. One was the spot where D27 ardwargiya orange was finished. The other was a double site, a depression with two small holes at the bottom, one being the entrance made by D02 jaba when it was finished, the other made by

a plant whose name I could not understand. At each site where a Dreaming sank into the sand, the men snapped their fingers in the downward spiral motion.

4.5. DS42. 093:n/a. C42. 009♂BM led the other men in single file as they approached the Dreaming site and circled around a small pile of fallen logs in the middle of a depression about ten meters in diameter and 30 cm deep. They used a stylized walk with feet raised high then coming down flat onto the ground. When 009♂BM reached the spot that marked a complete circuit of the depression, he hit the ground hard with the stick he was carrying, the procession stopped, and we looked at the objects concealed in the logs. They included:

- very large bullroarers called *ILABERA-ILABERA*, one with 3 sets of concentric circles, others with 2 sets or unmarked
- a small piece of wood shaped like a kangaroo tail
- small stones identified as follows:
 - emu eggs - large regular ovals
 - emu eyes - small spheres
 - kangaroo kidneys - large irregular ovals
 - young kangaroos - small irregular ovals

This was the principal D01 kangaroo and D08 emu Dreaming site owned by 009♂BM, 017♂AL and 029♂WM. 009♂BM handled the objects, cleaned them, described them to me and concealed them again in the depression.

We drove a few more miles then hiked about half a mile to a small cluster of large boulders sticking up out of the sand, identified as D01 kangaroos:

- Some protruded out of the sand at 45 degree angles to each other, pointing upward. 029♂WM said they were about 1.5 m tall, but only 30 cm was visible.
- Some stood in a straight line at the south edge of the cluster. Their even spacing, similar sizes, same orientation, etc., suggested that they could have been erected by people. There is no doubt, however, that the damage done to them was caused by a man with a hammer. They were broken off about 30 cm above the ground.
- Another stood just beyond the edge of the cluster, buried shallowly under the sand. The men had to search for a while to find it, but it repaid the effort: a bit over a meter square with a crack across the top. It was identified as the kidney of a “big bad D01 kangaroo”.

I remembered a statement that somebody made much earlier with reference to this particular site: “The really big D01 kangaroos are deep down in the ground; the ones we hunt for food are just their little ones.”

The men found another small cluster of stones not far from the first where another stone identified as a **D01** kangaroo had been damaged with a hammer. It was shaped like a right-angle triangle with the smallest point stuck down into the sand. The upper half was broken off, and that part was broken in half, too. But it had been repaired. The two segments were being held in place by supporting stones. Despite cultural and biological genocide practiced by white vandals, the Dreamings remained firmly implanted in the ground.

4.6. DS38. 204:n/a. c9. C38. The last and most extended sortie used 3 vehicles, covered over 300 km and lasted 12 hours. It was attended by 18 participants: 9 mature, senior or elderly men as instructors and 9 ardwa andidja as students. Here I focus on two **C38** sites; next I describe one **C44** site.

They searched through the moderately dense scrub until they found the tree they were looking for, standing in an area of low trees, exceptional only because it had a platform attached to it. The tree trunk served as one vertical support and two poles served as the other supports for a horizontal triangular surface a bit more than a meter on each side and about the same distance above the ground. The surface itself was made of substantial poles, and the whole thing looked strong enough to support several members of our group. Surrounding the tree and platform was an area cleared of pebbles, centered on the tree.

The platform held two packages, each of which contained collections of stone objects. Eight men spread their shirts on the ground to keep the aljera clean. Both packages contained bullroarer-shaped and egg-shaped stones. **018♂BM** and **019♂SM** removed the items from the first one; **112♂JB** handled the second one.

After all of the stones were spread out and dusted off, **018♂BM** opened his briefcase and removed little bundles of galah feathers, skeins of hair string and several nose pegs to use at this time. Holes for the pegs used to be made in the septum, but not anymore, so only the oldest men had them – **001♂JA**, **004♂LP**, maybe **003♂WL**.

Bullroarer-shaped stones were described as **D01** kangaroo, egg-shaped ones as **D01** kangaroo components: kidneys, eyes, fat, testicles, etc. The men cleaned everything except the eyes. If you clean the eyes, kangaroos can see better and then you can't sneak up on them while hunting for food. When the smallest **D01** kangaroos in the first package were unable to cross the McDonnell Ranges in the Dreamtime, they cut an opening now known as Heavitree Gap near Alice Springs. Several of the stones had imperfect surfaces that were explained; e.g., one of the smallest lost a little chip when he cut the Gap.

About half of the stones in each were Pitjara and the other half were Ngwariya; i.e., all were in alternate generations within the Pitjara-Ngwariya patrimoiety. All of them were referred to by kin terms. Those who Dreamed them called them Father and Father's Father; the others called them Mother's Father or Wife's Brother.

The two packages used to be located at different, separate places. The first one belonged to C38 and had always been in the general area of our sortie. The second belonged to a Country near Elkedra. Years ago it was brought to share the relative safety of the C38 objects when whites damaged some Alyawarra sites at Elkedra. Now, when D01 kangaroo increases were required, they were done at Amaroo and the packages were used separately and alternately. One difference in the history of the two sets of objects was emphasized several times. In the early days, the ones from C38 traveled around, the two smallest ones as far as the Petermann Range, while those in the Elkedra package did not travel at all.

The stone objects were not made by man, but the *packages* were. In attempting to account for the existence of the stones, 113♂AM said: "Maybe ... what's his name?" (answer from somebody I couldn't see: "Jesus") "Yeah. Maybe Jesus made 'em. ... All these came up out of the ground like Dreamings. Then man was made, and all of the Dreamings turned into this business (i.e., into the Dreaming objects in the packages). Now we are D01 kangaroo men." Jesus was interpreted as an ancestral Dreaming.

Various people in the group were related to the seventeen aljera in complex patterns that I have not analyzed. For example, 015♂BN and 112♂JB were full brothers. 015♂BN bossed stone #9 in the package on the left, while 112♂JB bossed #1,2,9 in the package on the right. Similarly 019♂SM, 005♂FM, and 018♂BM all had the same father, but 018♂BM had a different mother. 018♂BM bossed objects #1-7 in the package on the left, while 019♂SM bossed #3-4 and 005♂FM bossed #5-6 in the package on the right. Even though the two package came from different Countries long ago, all of the men with me identified themselves as members of C38.

Age was not the only factor in selecting a garbuda. 018♂BM definitely was not the oldest male member of C38, yet he and everyone else agreed that he was the head of C38 business. "When I call 'em from all over - Lake Nash, Elkedra, Warrabri, everywhere - they all come here for the D01 kangaroo business." 005♂FM, 015♂BN, and 112♂JB were about the same age as 018♂BM, but all benefitted from 018♂BM's knowledge and skills.

Our next stop was at a similar platform that contained two gornaidja bullroarers used to increase D08 emu, and six oridja that were shaped like bullroarers and made of wood but were more than a meter long. They were for the D23 aljuarda seed dreaming of C38. Unlike the stone aljera that had no decorations except for a mixture of fat and ochre spread over them, the oridja were

covered with carved designs representing seeds, men, plant roots, the holes in the ground from which the Dreamings first emerged and then re-entered, and a snake whose relationship to the seed was unclear to me.

Although there was no suggestion that this site was unimportant, it seemed to be less important than the one that we visited earlier. D01 kangaroo started his travels from the earlier site, but D23 aljuarda seed did not start his travels in C38. Rather, this was only one of the stopping points on travels that began at C44. In conjunction with this D23 seed Dreaming, 018♂BM opened his second suitcase and 006♂TM withdrew from it a small package containing two small oval stones incised with circles and dots. His mother dreamed this D23 seed, and he took care of it even though he was not from C38.

018♂BM and 113♂AM who were riding in the cab with me said they must get a kangaroo and give it to the alugera-ARINDYA who would prepare it for them. "Since we do all of this business today, they have to fix a kangaroo for us."

4.7. DS44. 235:n/a. C44. At the top of a rocky hill, red sand and brown rocks gave way to a crest overlooking a wide, shallow canyon cut by a tiny creek. The view back down the hill was superb, and the scene at the top was fascinating. The object was a low, long, narrow wall of very heavy black stone, like a volcanic intrusion, straight as an arrow, with a small alcove or niche at the mid-point. No aljera were kept there.

As we approached the crest, 001♂JA went directly to the alcove and lay down inside it. The other men approached in single file behind 002♂BR who dragged a stick behind him to obliterate their tracks. They went around the top of the hill before reaching 001♂JA at the wall, half-running, half-walking until 002♂BR was near enough to touch 001♂JA, shake him to awake him, and chant briefly. After 001♂JA arose, 002♂BR dug a tiny hole inside the alcove. DK♂DK, a visitor from Lake Nash, got in front of him so that 002♂BR had to reach around DK♂DK, one arm on each side of him, to reach the loosened sand in the hole. Both of them picked up the sand and let it trickle back into the hole while they sang a short song. Gulluh.

When D22 ilauwa seed finished his travels, he went to sleep just outside the alcove. 001♂JA re-enacted the arrival of D19 Man who awakened D22 ilauwa from his deep sleep, and D22 ilauwa entered the alcove. D22 Ilauwa ndanga seed Dreaming was finished. Finishing one's travels may mean something like achieving immortality.

Act 5. Teach him at increase events.

Academic analogy #6. The young man graduated and assumed responsibilities for maintaining the integrity of the universe.

5.1. DS61. 155:n/a. Y-site. At a site where D34 rain Dreaming was finished, 004♂LP, 014♂JC and 028♂DR did not just display and explain the aljere to 071♂JP, but went considerably beyond that by using the stones in a brief increase event that further demonstrated the methods, objectives and effectiveness of the educational system.

We stopped first at a huge mulga tree and from it retrieved a bundle shaped much like a football, but a meter long by half a meter in diameter, that contained items including the following:

- An enormous skein of hair string
- Several small packs of eagle wing feathers
- A few large emu feather agailba
- Several packs of black cockatoo feathers
- Some nose pegs with a tiny feather attached to one end of each.
- A coolamon bowl
- A WOOMERA spear thrower

They extracted several items from the bundle, put everything else away again, got two rifles, and said they were ready to go. About 40 km later, they shot two kangaroos, the largest I had ever seen, both requiring the combined efforts of two men to load them into the vehicle. I commented on their size and someone said they were fat ones.

When we stopped, 004♂LP and 028♂DR unloaded the kangaroos and removed their entrails. 004♂LP sprayed some of its blood into the air and, for use later in the morning, he took the stomachs, something resembling appendices, and little piles of fat that he removed from the intestines. We walked about half a mile to the first site where we found D35 lightening, a pair of small stone slabs standing upright and close together with rocks at the base supporting them. As the men approached the slabs singing, 028♂DR drew a piece of brush behind him to obliterate their tracks. 004♂LP rubbed the sides of the slabs with a small rock, the singing ended and we departed after about 3 minutes.

About 150 m further along, we came to a long, narrow, shallow hole with a slab of gray slate-like rock protruding upward from the bottom. They described the rock as rain clouds and said that the sparkling grains in it were D34 rain itself. While standing on the bottom of the pit, which

someone called the "rainmaker's office", 028♂DR chipped off several small pieces of rock and threw them out of the hole, scattering them over the ground within a radius of about 5 meters. Their singing continued until we left after perhaps three minutes. At the third stop, 004♂LP said that we must be careful since tampering with those rocks could result in a flood if we were not careful. Thus access to the area without a guide was strictly prohibited.

Our final destination about 200 m away was a low tree with a little space in the center for concealing the package that 004♂LP opened. It held seven glistening crescent-shaped aljera stones and a small shell from a bivalve. The aljera were of a greenish sparkling material, the smaller ones curved like tourist boomerangs, the larger ones like the letter "J".

In preparing to use the aljera, 071♂JP assembled clumps of cockatoo feathers that represented the D12 ndyalbindya rain bird. 028♂DR attached them to little sticks that served as handles. All of the men put on hair string headbands and affixed a feather-stick behind each ear. 028♂DR built a tiny fire and placed the kangaroo fat in it for about a minute. They mixed parts of the contents of the kangaroos' entrails with a bit of 028♂DR's blood, then spread the mixture evenly over all surfaces of all objects. After everything was dry, they rubbed fat over it.

When the aljera were ready, the men sang two songs facing north into the clear blue sky in single file, the first while kneeling, the second while standing. 028♂DR said they sang to "clean the sky of dust" and to "make the rains come from the ocean". When the second song ended, they put everything back the way it was before we arrived, and we left. And that was all.

After months with no rain, rain fell that night. Was it a matter of coincidence, magic, clever technology or remarkable ecological sensitivity? I don't know, but the action appeared to be as successful as cloud seeding has been for the US-NOAA (National Oceanic and Atmospheric Administration), the University of Nevada's DRI (Desert Research Institute) and the Australian CSIRO (Commonwealth Scientific and Industrial Research Organisation). The next morning 004♂LP smiled at me and said something that sounded a lot like "I told you so."

Increase events like this one but vastly larger and more complex sometimes had hundreds of participants but the idea seemed to be the same. Their primary objective was replication in perpetuity - replication of the kangaroos, emus, goannas, fruits, vegetables, people, fire, water, death and all of the other constituents of the universe embodied in the ancestral Dreamings. Thus the main bosses of kangaroo and all of the other Dreamings had responsibilities that required great technical and administrative skills based on their assumptions concerning the nature of the universe. Knowledge and skills learned in the contexts described above, as well as in the increase events themselves, may have constituted the principle mechanism that kept the universe functioning properly and underlay the persistence, stability and homeostasis that together yielded

Stanner's (1965) "abidingness", a defining feature of Australian Aboriginal societies in general to which I refer frequently below.

Not surprisingly, their assumptions about the structure and operation of the universe and their own technical and ethical roles in it were fundamentally different from Western assumptions. But it was not a matter of correct assumptions versus incorrect assumptions, for the dominant assumptions of mid-20th science will be laughably quaint a thousand years from now, as was demonstrated by yesterday's report (Kaplan and Guarino 2017) concerning gravitational waves, kilonovas and the origins of heavy elements generated by the first known collision of two neutron stars about 130 million light-years from Earth. Even as I write this sentence, it is moving rapidly toward quaintness.

Summary.

MHaM spans 50 pages and contains more than 24,000 words. Despite its length, it only briefly recapitulates a vast amount of highly detailed Alyawarra oral literature, music and art that was stored in the memories of individual people each of whom was a specialist in the Dreamings associated with his own Country, and in the aljera that were manifestations of his Dreamings concealed in repositories throughout Alyawarra territory. But since none of the people had command of the "whole story" or "big picture", it was impossible for anthropologists, missionaries or other aliens, using the Bible or the Qur'an as their model, to learn much from interviews with one or a few key informants. There was no "master copy" of what appears to have been a coherent continent-wide phenomenon with great historical depth. Rather, the enormous body of knowledge concerning the Dreamtime and all of the Dreamings was distributed in fragments throughout the entire population.

The presentations and performances described above were accompanied by instructions and lengthy discussions, but the major educational content of the sessions - that which yielded Stanner's (1965) abidingness and F.Dyson's (1985) homeostasis that generally characterized Australian Aboriginal societies - resided in young men's learning to replicate Dreamtime events.

Despite the complexity, duration and geographical spread of the activities described in Act 2, and the number and age ranges of the participants, I never saw even one person who appeared unsure of what to do next; i.e., the coordination appeared to be perfect at all times. Although I understand that the Alyawarra as a whole have performed the same or similar activities over and over through the years (or centuries or millennia), I nevertheless found the precise articulation of every movement to be amazing. Perhaps I was naïve enough to be amazed easily.

Yet I was not naïve enough to believe that the sample of size one that I observed was repeated *in toto* and slavishly for the circumcision of all of the boys. Rather I believe I saw a “theme” that had an uncountable number of possible “variations”.

If we assume that electronic components of computers, neural components of brains, and human components of societies are similarly imperfect, it is not unreasonable to speculate that highly redundant educational processes displayed here among the Alyawarra, based on the replication of multiple relational networks, facilitated the synthesis of reliable societies from unreliable people (von Neumann 1956).

3. *Tabular summary.*

During 14 years of training (plus additional decades of lifelong learning), what were young men expected to learn in order to participate fully as adult men in Alyawarra society? Here I present a series of ten hypothetical “university level course descriptions” that constitute a formal outline of the informal academic program (as I understood it) that ardwa andidja followed in the years before and after 1971-72. I present the descriptions in a plausible instructional order and assume that the format of each course would be flexible and negotiable - lecture, seminar, laboratory, communal mentoring, on-the-job training, online research, computer simulation - and especially Alyawarra instructional models of which I am unaware.

I infer that the Alyawarra traditionally learned what they needed to know inductively, from the ground up, assembling a huge body of knowledge from first-hand experiences. My hypothetical course descriptions use a top-down theoretical approach that takes for granted much of the knowledge that boys would have accumulated before their circumcisions, but I suggest that the actual teaching would follow a traditional bottom-up approach that would span about 14 years. Teaching would continue to be distributed throughout the population, and would be conducted in Alyawarra, Alyawarra-English and English as it was in 1972. Thus I offer an exercise in speculative science.

Although the tabular summary deals exclusively with the circumcision of 056♂DJ, most or all of the events concerning his circumcision occurred repeatedly in the following weeks as different sets of actors used different oral and visual materials to produce their own customized versions of *MHaM* to match the attributes and relationships of the other boys who were circumcised.

Actors and attributes.

Actors did not participate at random in the actions that occurred in *MHaM*. Rather, they constituted several complex samples of the total population embedded in Table 3.1 (data) and 3.2

(key). The following is a brief, superficial overview of the range of topics to be explored. I suspect that most young men would recognize most topics on the basis of their childhood experiences, although they certainly would not have conceptualized them this way.

Table 3.1 lists the sixteen oldest individual male actors in *MHaM*; they constitute a small, illustrative sample of the 69 named people (including 056♂DJ) who played specific roles in the first circumcision (Circ#1) of 1971. In the complete *MHaM* dataset, which is available online at <http://www.culturalsciences.info/AlyaWeb/index.htm> the upper part lists 49 males and the lower lists 20 females. From left to right, attributes (variables and their values) associated with each actor include Record# and Id#, plus demographic, descent line, genealogical, residential, kinship and behavioral attributes. Table 3.2 contains keys - and pointers to keys - to attributes listed in Table 3.1. The courses proposed here would cover the topics listed in Table 3.2.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Recd#	Id#	Sex	Yob	Age in 1971	Age Category	Language	Dreaming	Country	F	M	Sp1	Sp2	Sp3	Patrimoiety	Mairimoiety	Marriage moiety	Subcommunity	Residence	Section terms	Kinship terms	Actions
1	1	1	1880	91	5	1		44	305	363	154			13	14	1	21	31	1		
2	2	1	1890	81	5	1		58	303	362	193	1824		13	14	1	11	60	1		
3	3	1	1890	81	5	1		31	347	308	174			24	23	1	21	35	2		
4	4	1	1894	77	5	3		61	403	401	172			24	23	2	28	56	4		
8	5	1	1907	64	5	1		38	352	323	185	1022		24	23	1	25	54	2		
9	6	1	1908	63	5	1		58	304	354	373	178		13	14	1	25	47	1		
5	7	1	1900	71	5	1		15	320	360	155			13	14	2	24	37	3		
6	8	1	1903	68	5	1		44	305	364	370			13	14	1	21	11	1		
7	9	1	1904	67	5	1		42	361	310	337	152	204	24	23	1	21	33	2		
10	10	1	1908	63	5	1		58	303	362	160			13	14	1	26	67	1		
11	11	1	1910	61	5	1		44	305	364	170			13	14	1	24	41	1		
12	12	1	1910	61	5	1		15	322	375	169			13	14	2	24	40	3		
15	13	1	1914	57	5	1		43	342	398	168			24	23	1	22	43	2		
14	14	1	1912	59	5	1		73	409	408	340			24	23	2	22	11	4		
13	18	1	1910	61	5	1		38	352	400	158			24	23	1	27	69	2		
16	112	1	1915	56	5	1		38	351	317	394	164		24	23	0	27	71	4		

Table 3.1. Data sample. Record#, Id# and 20 attributes of the sixteen oldest male actors in *MHaM*. Values for Dreamings, kinship terms and actions are stored elsewhere (see text).

Col #	Attribute name
1	Record Identification #
2	Personal Identification #
Demographic attributes	
3	Sex
4	Year of Birth
5	Age in years in 1971
6	Age categories in years
Descent line attributes	
7	Dreamings: see Table 3.5
8	Language
9	Country
10-14	Genealogy: F, M, Sp1, Sp2, Sp3
15-17	Moiety: patri-, matri-, marriage
Residential group compositions	
18	Subcommunity
19	Residence
Kinship attributes	
20	Section terms: K,P,B,N
21	Kinship terms: see Table 3.12
Behavior observations	
22	Actions, acts, scenes and locations: see Table 3.15

Table 3.2. Key to Table 3.1.

Size and shape of the *MHaM* population.

I begin with aspects of Alyawarra demography that pertained to circumcisions in 1971-72, focusing on biological attributes of sex and age that constituted the underlayment upon which other attributes and relationships rested. Being a non-numerate society in 1971, specific calendrical ages were irrelevant to the Alyawarra but were available from census records and white Australian cattle station operators who began to record births and deaths shortly after the onset of homesteading early in the 20th century. Thus the sex-age classes (cohorts) that I

postulate in Table 3.3 were more useful than absolute numbers²¹. In Table 3.3, sex-age classes appear with Alyawarra terms for each. Age ranges for these classes were somewhat flexible or imprecise among the Alyawarra, but I have standardized them for use in this paper, based on my data from 1971.

In my alloparenting paper (Denham 2015), I discussed similarities and differences in the training provided primarily by ARELA (women) to GWAYA (girls) and AWAYA (boys) in the 0-13 year age range in age class 1. By contrast, now I discuss communal mentoring provided primarily by men of all ages to young men in the 14-27 year age range of age class 2.

69 (26%) of 264 members of the research population participated as actors in *MHaM*. Although males and females of all age classes participated, 49 (37%) members of the total population of 134 males and 20 (15%) of 130 females were actors; i.e., the actor population was biased toward older males, therefore away from children and females.

Male and female members of age class 2 experienced coming of age in strikingly different ways. Girls entered age class 2 immediately after the onset of menstruation. Shortly thereafter, they generally married men in age class 3 or 4 and had several children by the time they entered age class 3 as mature women about 14 years later. Boys entered age class 2 immediately after being circumcised and began their intensive training so they would be eligible to marry upon being promoted to age class 3 about 14 years later. Since men of age class 2 were in training and not yet eligible to marry, men of age classes 3 and 4 often married younger women as well as older women, thereby generating polygyny as a reality and generating an illusion of GERONTOCRACY for outside observers who failed to understand age relations in Aboriginal societies. Because of the bifurcation that occurred at age class 2, I describe separate male and female age class sequences.

²¹ The age classes that I define and use here have nothing to do with traditional African age grades.

Sex-age classes								
Age class	Year of Birth	Age range	Females			Males		
			Alyawarra terms	Rsch pop total	MHaM actor total	Alyawarra terms	Rsch pop total	MHaM actor total
5	Before 1916	>55	elderly woman arelambwa	15	5	elderly man ardwa ayua	16	16
4	1916-1929	42-55	senior woman arelambwa	11	4	senior man ardwa elgwa or ardwa ambwa	14	11
3	1930-1943	28-41	mature woman arela f.s. or awunga m.s.	24	5	mature man ardwa elgwa m.s. or adaya f.s.	12	7
2	1944-1957	14-27	young woman arela f.s. or awunga m.s.	31	4	young man ardwa andidja	35	13
1	1958-1971	10-13	♀child3 gwaya elgwa	49	2	♂child3 awaya elgwa	57	2
		6-9	♀child2 gwaya elgwa			♂child2 awaya elgwa		
		2-5	♀child1 gwaya algelya			♂child1 awaya algelya		
		0-1	♀infant gwaya algelya			♂infant awaya algelya		
Column totals				130	20		134	49

Table 3.3. Key to sex-age classes with Alyawarra terms, defined by my own estimates of applicable age ranges in 1971. Totals are for the whole research population and for actors in *MHaM*.

Male age classes.

Male age class 1. (2/57♂). Table 3.4 lists 8 awaya in age class 1 who lived at or near Gurlanda camp in 1971-72 and joined age class 2 as ardwa andidja when they were circumcised during the 90 days between Day077 and Day167. Two of these boys, 056♂DJ and 062♂SR, were members of the group of 69 tabulated above; the other 6 did not participate in the activities associated with the circumcision of 056♂DJ, therefore they did not appear in this group of 69.

The boys listed in Table 3.4 were members of age class 1 regardless of their ages, since they had not yet been circumcised. They constituted a diverse group. My information concerning 056♂DJ during the first circumcision (Circ1) was based almost entirely on 104 first-hand observations of the boy that I made at Gurlanda camp during the 108 hours spanned by *MHaM*. Circ2, 3, 4 and 6 also occurred at Gurlanda but I did not observe them systematically and my references to them were based primarily on observations reported to me by first-hand Alyawarra observers. Circ5,7and 8 occurred at Utopia Station about 40 km away and Liladera camp about 80 km away both of which were remote from Gurlanda where I lived and my references to those events were based on reports that reached me some time after the events occurred. *MHaM* dealt primarily with Circ1, secondarily and indirectly with Circ2, 3, 4 and 6, minimally with Circ7 and 8 (a pair of concurrent circumcisions), and not at all with Circ5 about which I learned almost nothing.

The five awaya circumcised at Gurlanda ranged in age from 14 to 19 years, a bit above average according to Binford's (2001) tabulation for Aboriginal Australia. I am confident that the Alyawarra data were accurate, but continent-wide age estimates were less precise.

In addition to 056♂DJ and 062♂SR, both of whom were approaching circumcision, I identified only one small boy (DK Id, therefore not tabulated) in age class 1 who made a brief appearance in one scene of *MHaM* when he was introduced to his first Dreaming. Other small boys were members of the "chorus", but played no other roles that I saw in the events described here except for brief appearances in scenes 2.2.10 and 2.2.12.

1. Circ#	2. Day#	3. Id#	4. YoB	5. Age	6. Country	7. Section	8. CircLoc	9. #Obs
1	077-082	056	1952	19	43.	4.	Gurlanda	104
2	091-095	067	1955	16	31.	4.	Gurlanda	0
3	099-103	062	1954	17	58.	3.	Gurlanda	0
4	106 - 112	069	1956	15	38.	4.	Gurlanda	0
5	140 - ?	N/A	DK	DK	DK	DK	Utopia	0
6	144-151	1177	1957	14	42.	1.	Gurlanda	0
7	163-167	N/A	DK	DK	38.	2.	Liladera	0
8	163-167	N/A	DK	DK	DK	1.	Liladera	0

Key to columns 1-9.			
1	Circumcision number	6	Country identification number – Table 3.6c
2	Project day number when circumcision occurred		
3	Personal identification number of boy circumcised	7	Section membership – Table 3.8.
4	Year of birth	8	Circumcision location
5	Age	9	Number of actions recorded during <i>MHaM</i> .
DK = Don't know			
Gray rows = incomplete or missing data			

Table 3.4. All boys known to have been circumcised at or near Gurlanda camp in 1971-72.

Male age class 2 (13/35♂). Only 13 of the 35 ardwa andidja in age class 2 appeared as actors in the narrative summary, but that number would have been much larger if I had not made an important error. Until quite late in the 108-hour series of events leading to the circumcision of 056♂DJ, I did not understand the educational significance of the ever-present swarm of ardwa andidja throughout *MHaM*, nor did I consider performing a quantitative analysis such as this one. Although I made brief comments in my notes concerning crowds of young men, I failed to pay

sufficient attention to those crucially important people who were the *raison d'être* for the events that were happening. By the time I understood my mistake, I had failed to record the necessary data from earlier scenes, and it was impossible for me to do anything about their omission. In other words, while I was studying the circumcision of 056♂DJ, I recorded a great deal of data concerning teachers and administrators but far too little concerning the identities of students. Nevertheless, they were ever-present. *Mea culpa*.

Not only were these ardwa andidja recipients of training, but also the 13 whom I identified explicitly in *MHaM* were apprentice trainers of the boys being circumcised in 1971, especially as dancers at DG1 and DG2. Their own older brothers had played the same roles toward them only one or a few years earlier.

Male age class 3. (7/12♂). Seven of the 12 men in age class 3 were actors in *MHaM*. These men had completed the celibate years of their training and had begun to marry and sire children. They tended to be elder brothers and cousins of the boys who were circumcised in 1971, and had begun to play significant roles as trainers, solo dancers and group performers in individual scenes at dance grounds and business camps. One member of this age class was promoted to garbuda-in-training in conjunction with these circumcisions.

Male age class 4. (11/14♂). Eleven of the 14 men in age class 4 were actors in *MHaM*. As senior men, they had a great deal of responsibility for presenting *MHaM* as a whole, and often served as principal performers in dramatic and musical presentations at Business Camps.

Male age class 5. (16/16♂). All 16 of the men in age class 5 were actors in *MHaM*. Most of these elderly men were classified as garbuda of their Countries (patrilineal descent groups) and provided various kinds of intellectual and behavioral guidance to the men in age classes 4 and 3. In my opinion they were consistently respected for their knowledge, wisdom and experience, and presumably would have been responsible for resolving conflicts had any occurred. Generally speaking they were “grand old men” who quietly supervised acts and scenes as they unfolded at the dance grounds and business camps.

Female age classes.

In this description I minimally introduce genealogical and kin relationships for the description would make no sense otherwise, and return to these relationships in greater detail below.

Female age class 1 (n=2/49♀). Two of the 49 members of this age class were actors in *MHaM*. One was an 18-month-old girl who was introduced to her first Dreaming; the other was a 12-

year-old girl who was a genetic sister of 056♂DJ and appeared briefly in one scene. Other small girls who were members of the “chorus” did nothing else that I saw in the events described here.

Female age class 2 (n=4/31♀). Four of the 31 arela in age class 2 were actors in *MHaM*. They appeared in only one scene, and they were joined in that scene by 6 other women of all age classes who did not appear in any other scenes.

Female age class 3 (n=5/24♀). Five of the 24 women in age class 3 were actors in *MHaM*. Members of this age class were too old to become a potential first wife of 056♂DJ, and only one was old enough to be his potential first wife’s mother. Four of them appeared in only one or two scenes each, but the potential wife’s mother appeared in eight scenes.

Female age class 4 (n=4/11♀). Only 4 of the 14 women in age class 4 were actors in *MHaM*. One was the mother of 056♂DJ; another was a potential wife’s mother and a biological sister of the potential wife’s mother in age class 3. This woman appeared in eight scenes with her sister.

Female age class 5 (n=5/15♀). Five of the 15 women in age class 5 were actors in *MHaM*. They were 056♂DJ’s mother’s older sisters or his mothers’ mothers.

Thirty-four (81%) of the 42 men in age classes 3 - 5 were actors and communal mentors in *MHaM*, and 14 (28%) of the 50 women in age classes 3 - 5 played supporting roles. Even by these preliminary measures, an unambiguous transition occurred. Alloparenting by women and children of boys in age class 1 gave way to communal mentoring by men of ardwa andidja in age class 2. The decline in young men’s interactions with females became even clearer after circumcision wounds healed. During the years when young men lived in the ngundya, their mothers generally prepared their meals and their young sisters typically delivered the food to them near the ngundya, but at least in theory the young men had little or no contact with females.

Most of the terms that I have used to introduce sex and age relations are mine and not those of the Alyawarra. I believe I have honestly described what I observed, inferred and deduced, but there is a real possibility that I got it all wrong. The same is true of all of this summary. Beware.

Dreamings.

Dreamings, Dreaming sites and Dreaming tracks were important elements in the vertical, horizontal and lateral organization of Alyawarra society.

Table 3.5 presents all of the Dreamings that I learned about while I was recording *MHaM*. It lists Dreamings by their categories and names in the English and Alyawarra languages, and includes

the number of times I heard and cited each of them in *MHaM*. It is by no means an exhaustive or systematic list. The frequency of occurrence in *MHaM* provided a proxy or minimal measure of relevance, importance, popularity, centrality or other factors unknown to me. Understanding how multiple Dreamings were related to multiple Countries, the sequential order in which they appeared on the ground and their meanings to the Alyawarra would have required that I devote unavailable time and effort to mastering the Alyawarra language and culture. Rather, Table 3.5 simply tabulates references to Dreamings that appeared in *MHaM* and provides a skeletal framework for the rest of the paper.

Minimally, a Dreaming site was a place where a Dreaming (e.g., kangaroo) jumped up from the earth at the beginning of its travels along Dreaming tracks, or descended back into the earth at the end of its travels. But the situation was more complex. In some cases, Dreamings did not travel: rather, they jumped up, stayed permanently at the original site, and later descended at the same place. Furthermore, when a Dreaming traveled, it could pause at intermediate “resting places” of its own that were widely dispersed across the desert, or at similarly dispersed sites associated with other Dreamings.

The Dreaming tracks that extended outward from Dreaming sites constituted the “international” cognitive network that seems to have interconnected most or all of the Aboriginal societies in pre-contact Australia. Thus kangaroo people, kangaroo Countries and flesh-and-blood kangaroos occupied resource areas in many adjacent or nonadjacent regions. Alyawarra travels among various Countries associated with single or multiple Dreaming sites contributed to intermarriages among diverse language groups.

Dream #	English kingdom	English species	Alyawarra name	Frequency of occurrence					Row Total
				Act 1	Act 2	Act 3	Act 4	Act 5	
Animal									
D01		Kangaroo	auhra	4	19	9	11		43
D02		Witchetty grub	jaba		22		1		23
D03		Grub (larva)	jaba oodneringaida	4	1		2		7
D04		Grub (larva)	jaba alinya		1				1
D05		Grub (larva)	jaba ngurbiya				1		1
D06		Sugarbag (ant)	ngwarla	1					1
D07		Sugarbag (ant)	ngwarla yeremba			1			1
D08		Emu	?	1			2		3
D09		Parrot	adedera			2			2
D10		Bird	orabilba			1			1
D11		Bird	albaidya				1		1
D12		Rainbird	ndyalbindya					1	1
D13		Frog	mbwalenga		1		1		2
D14		Lizard	abmalbenga		1				1
D15		Lizard	nyarla aluwaidyera			2			2
D16		Lizard	nyarla				1		1
D17		Possum	?		3				3
D18		Dingo	arenga			7			7
D19		Man	?				1		1
Plant									
D20		Seed	ndanga			2			2
D21		Seed	ngwaiyanga			1			1
D22		Seed	ilauwa ndanga				1		1
D23		Seed	aljuarda				4		4
D24		Seed	mainyeru				1		1
D25		Tobacco	pituri			1			1
D26		Orange	numungera			1			1
D27		Orange	ardwargiya				1		1
D28		Plum	yerendena				1		1
D29		Potato	anaidya				1		1
Inanimate									
D30		Rock	abuda			1			1
D31		Feathers	angwena			1			1
D32		Water	mwaidya			1			1
D33		Night	iyungwa				2		2
D34		Rain	?					2	2
D35		Lightening	?					1	1
Column Total				10	48	30	32	3	124

Table 3.5. Dreamings identified in *MHaM*.

? = unknown Alyawarra name

Some of the complexity is reflected in the Alyawarra names in Table 3.5. In the case of Dreamings D02-D05, jaba referred to grubs - probably Spencer and Gillen's (1899) famous witchetty grubs – followed by oodneringaida, ngurbiya or alinya or other terms that referred to particular types of grubs or to particular Dreaming sites. To me jaba oodneringaida seemed to refer to a site affiliated with C43 to which 056♂DJ and 013♂JJ were members. However, to Spencer and Gillen (1899:654) it was a generic term for witchetty grubs; i.e., it seemed to refer to a species rather than to a site. In the case of Dreamings D20-D24, the order of the terms was reversed. Ilaawa, aljuarda, mainyeru and ngwaiyanga seemed to refer to various plant species, while ndanga referred to the seeds of all of them. Due to the combining forms in Table 3.5, the total number of records (35) over-counts the number of “species” (28). Here I present a small sample of numbers that reveal interesting patterns in Table 3.5.

Kangaroo (D01) by itself accounted by 43/124 (35%) of all references to Dreamings in *MHaM*, but those references were scattered throughout the scenes and sub-scenes and no individual scene had an especially large number of them.

But from a slightly different perspective, the view is different. Using the broadest possible focus on all references to Dreamings in *MHaM*, auhra (kangaroo D01) and jaba (grub D02-D05) together accounted for 75/124 (66%); i.e., 2/35 (6%) of the species accounted for 66% of all references. Next I narrowed the focus to a single Act. Of all references to Dreamings in Act 2 Sing Him, the jaba and auhra pair together accounted for 45/48 (94%). Finally I narrowed the focus still further to a single scene (focused too narrowly to appear in Table 3.5). Of all references to Dreamings in Act 2 Scene 3 Cut Him, the moment when the circumcision itself occurred, jaba alone accounted for 10/11 (91%) of all references. Both jaba and kangaroo were principal Dreamings in *MHaM*, but their roles were quite different. It is not surprising that 056♂DJ and his F 013♂JJ Dreamed jaba, while 170♀LL and 188♂AC the potential mothers of his potential first wife Dreamed kangaroo.

All of the Dreamings recorded in Act 1 and 2 were animals, whereas animals, plants and inanimate ancestors appeared in approximately equal numbers in Acts 3-5.

Given the diversity of Countries represented in the seven circumcisions following that of 056♂DJ, it is safe to speculate that the mixture of Dreamings associated with those circumcisions would have been significantly different from the ones shown here.

Language groups.

Language groups generally encompassed a cluster of Countries and were geographically centered somewhere within that cluster. 235 (89%) of the members of the Alyawarra research population identified themselves and were identified by others as first-language speakers of the Alyawarra language, while 29 (11%) were first-language speakers of Aranda or other Central Australian languages. In a few of the latter cases, language affiliations were ambiguous.

Among the Alyawarra, a language group was a self-identified cluster of mutually adjacent Countries whose boundaries were imprecise and porous, permitting intergroup mobility or intermarriage among other properly aligned Countries and Dreamings. In 1971-72 the intermarriage rate between Alyawarra and non-Alyawarra speakers was about 21%, a rate that was representative of many Central Australian societies during pre-contact and early post-contact years as well as in the 1970s (Denham 2013, Dousset 2013, McConvell 2013, Sutton 2013a,b). Table 3.6 shows that about 90% of the research population as a whole and the same percentage of the *MHaM* population sample were native speakers of the Alyawarra language, and most were more or less fluent in Alyawarra, Aranda, English and some of 8 other neighboring languages or dialects. Table 3.1 contains data for superimposing a language grid throughout the paper.

Code	Name	Research population	<i>MHaM</i> population
L01	Alyawarra	235 (89%)	63 (91%)
L03	Aranda	13	3
L10	Mixed	16	3
Total		264	69

Table 3.6. Key to Table 3.1, First languages.

COUNTRIES.

Virtually all actions that occurred in *MHaM* were expressed in the complex idiom of Countries, site-centered locations that were strung like beads on Dreaming tracks. Alyawarra Countries were known alternately as clans, biologically-based patrilineal descent groups or patrilineal extended families. The field research population, summarized in Figure 3.1, included members of the languages listed in Table 3.6, plus 27 more or less contiguous Countries, each descended from one of the ancestral Dreamings represented by an apex. Geographically, a Country was a resource area associated with a Dreaming site; sociologically, it included male descendants of a Dreaming plus their daughters but not their daughters' children who were members of their own fathers' Countries. Table 3.7 lists 12 Countries that contributed identified actors to *MHaM*.

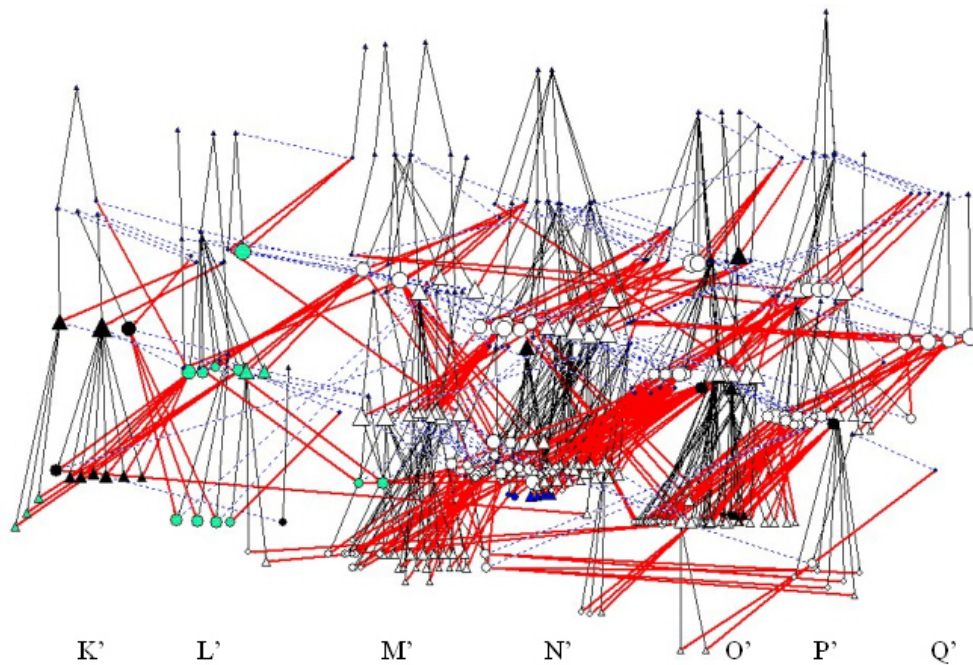


Figure 3.1. Network diagram of the 1971-72 Alyawarra research population.

Key

- 377 People:** Δ = male, O = female; small symbol = deceased, large symbol = living;
Vertical dimension: Age (year of birth), oldest to youngest from top to bottom, spanning 6 generations;
Vertical descent groups: 27 patrilineal lines collapsed from apexes to 7 descent groups K' = Aranda, L' = part-Alyawarra, M' through Q' = full-Alyawarra.
Linkages: solid black lines = father-child links in patrilineal moieties, solid red lines = mother-child links in matrilineal moieties, dotted blue lines = husband-wife links in 14-year W<H age biased marriage moieties;
Language group membership: white = Alyawarra, green = Alyawarra-Aranda mix, black = Aranda, blue = informants disagreed on language group affiliation;
Network diagram: prepared by D.R. White (Denham and White 2005) based on data from Denham (1971/2007), featuring sibling sets generated with Pajek network analysis software (Batagelj & Mrvar 1998; de Nooy, Mrvar & Batagelj 2005). Details at Denham and White (2005) and Denham (2012).

Forty-three members of Countries 43, 58, 38 and 44, listed at the top of Table 3.7, were genetically related to 056♂DJ and appear in the genealogical diagrams discussed below in Figures 3.2-6. They constituted about 62% of all actors in *MHaM*. In addition, I included 7 members of C15 to provide a broader sample of people who were not close consanguineal kin but nevertheless were incorporated into the classificatory kinship networks. I have omitted genealogies of the other Countries (19 actors) listed in Table 3.5 because they take up a lot of space and their limited informational content is largely redundant with that in the Figures

included already. Table 3.1 provided the data for superimposing the grid of Countries upon the genealogies in Figures 3.2-6.

Code	Consanguineal*	Affinal**
C43	11	-
C58	11	-
C38	14	-
C44	7	-
C42	3	-
C41	2	-
C73	2	-
C15	0	7
C31	0	5
C61	0	4
C30	0	2
C81	0	1
Totals	50	19

Table 3.7. Key to Table 3.1, Col 9. 69 actors in *MHaM* were members of 12 Countries. Of the 50 actors who were biologically related to 156♂DJ, 43 were members of four Countries: C43, C58, C38, C44. Seven who were not biologically related to 156♂DJ were members of C15.

* Consanguineal links computed for all Countries.

** Affinal links not computed for Countries with consanguineal links.

Genealogies.

In *MHaM*, scene 2.2.6.2, I heard several times that any ardwa andidja could play the roles of the two walbiya or prisoners, but that was the only case in the week-long event concerning which anyone said that a kin relationship was irrelevant. The default option in all other cases was that specific biological or classificatory kin relations were of fundamental importance.

Of the 377 people in my research population, 264 were alive during my fieldwork and 113 were their deceased ancestors. In addition to the 69 living people who were explicitly identified as actors in *MHaM*, all but a few of the others were unidentified participants or marginal observers. In Figures 3.2-6, I examine relations between 156♂DJ and the identified actors in *MHaM*, focusing on genetic linkages traceable among close consanguineal kin and more distantly related affinal kin, and by extension to marginal participants, observers and ancestors. Knowing one's own genealogy to a depth of five or six generation levels was analogous to recognizing one's own footprints in the sand.

Table 3.8 is a key to symbols and codes used in Figures and Tables in the rest of the paper. Table 3.9 is an illustrative example of genealogical data for the first seven elderly men in Table 1.

DENHAM: ABORIGINAL MEN COMING OF AGE IN CENTRAL AUSTRALIA

WWW.MATHEMATICALANTHROPOLOGY.ORG

Symbols + Codes	Definitions
○	Living female ♀
△	Living male ♂
● ▲	Deceased ♀♂
┌──┐	Spouses
	Descendants
┌──┐	Siblings
F	Father
M	Mother
B	Brother
Z	Sister
S	Son
D	Daughter
H	Husband
W	Wife
E	Elder
Y	Younger
+	Male speaking
*	Female speaking

Table 3.8. Key to primary genealogical relations, also known as kin types. Standard kin type codes as in subsequent texts, Figures and Tables. Mix and expand as needed for links to more distant elations; e.g., MBDDD = mother’s brother’s daughter’s daughter’s daughter.

F	M	Sp1	Sp2	Sp3
305	363	154		
303	362	193	1824	
347	308	174		
403	401	172		
320	360	155		
305	364	360		
361	310	337	152	204

Table 3.9. Examples of personal identification numbers of ego’s Father=F, Mother=M and Spouses=Sp1, Sp2, Sp3 from which I constructed exhaustive genealogies.

After I completed my fieldwork, I conducted archival research that expanded my genealogical dataset from 377 members in 1971-72 to 1460 members spanning the period from 1817 through 1979. I constructed the genealogical diagrams in Figures 3.2-6 after I completed the fieldwork but before I did the archival research. After doing the archival work, I upgraded the diagrams by

adding newly discovered individuals and newly discovered links between existing individuals. All personal Id# that have values of <440 were derived from field data, while personal Id# that have values >1000 were derived from archival data. As a fringe benefit of the archival research, a few individuals in the diagrams are known to appear at incorrect generational levels. The label in the upper left corner of each diagram shows the Country number of each diagram and points to the online version of the final dataset at Denham (2016b,c).

Figures 3.2-6 are genealogical diagrams of all known (in 1972) members of a limited sample of 5 Countries, focusing on 50 members who played key roles in *MHaM*.

The genealogical diagrams in Figures 3.2-6 do not explicitly include the W<H 14-year age bias that generated the diagonal skew of Figure 3.1. These Figures are complicated enough without introducing the age bias, but in fact I extracted these diagrams directly from the data that yielded Figure 3.1. Thus the age bias that is explicit in Figure 3.1 is implicit in Figures 3.2-6. I leave it to readers to imagine the bias in each of the following genealogies.

Figure 3.2 for C43 is an introductory example. Red circles and triangles represent all members of C43; other circles and triangles represent members of other Countries. The principal actor 056♂DJ was a member of C43 and the red oval encloses his Id# (for ease of reference, I include redundant copies of 056♂DJ's Id# on other diagrams as needed). Red rectangles or squares enclose Id# of 10 other members of this Country who were actors in *MHaM*. The alphabetic code below Id#, taken from Table 3.8, is the kin type abbreviation of the genealogical relation between the principal actor 056♂DJ and each of the designated alters. Red lines trace the nodes through which 056♂DJ realized those genealogical paths.

Ascending traces in father's descent line passed from 056♂DJ through F (013♂JJ) to FF, FFF (341♂DK) and FB, so the kin to whom 056♂DJ was related in this diagram were members of his FFF's descent line. Since 056♂DJ's FM (398♀DK) and her ancestors were unknown, therefore were missing from the diagram, there were no traces from 056♂DJ through FM and her kin. Excluding 013♂JJ who was in a generation older than 056♂DJ, and 064♂SH who was in a generation younger, all of the Id# within red squares represented 056♂DJ's full genetic siblings, 5 brothers and 2 sisters. Alternating even-odd generation levels in this diagram descend from ... G+3 to G-1

In Figure 3.3 for C58, ascending traces passed from 056♂DJ through M (168♀DJ) to MF, MFB and their kin. Thus the Id# within red squares in the generation level above 056♂DJ were genetic or close classificatory siblings of 056♂DJ's M. The women in question were 056♂DJ's close classificatory M and the men were his close classificatory MB.

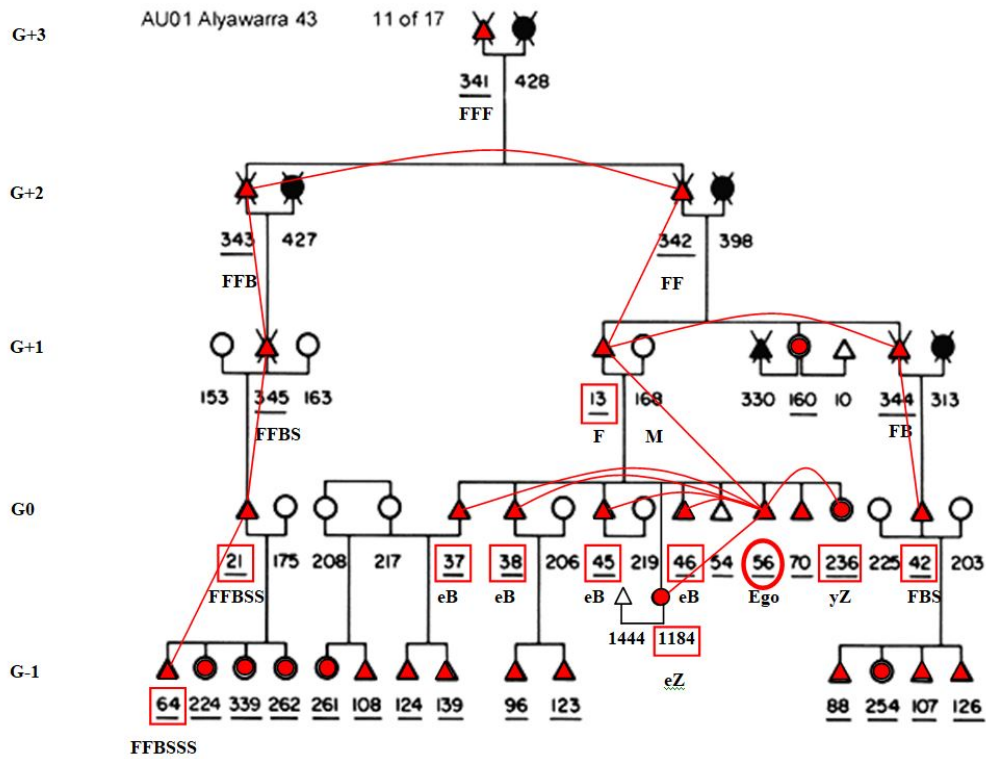


Figure 3.2. C43 (10 red squares, 1 red oval: n=11); links through FF; red fill color illustrates membership in C43 (fill color omitted from subsequent diagrams); alternating even-odd generations descend from (... G+3 to G-1 ...)

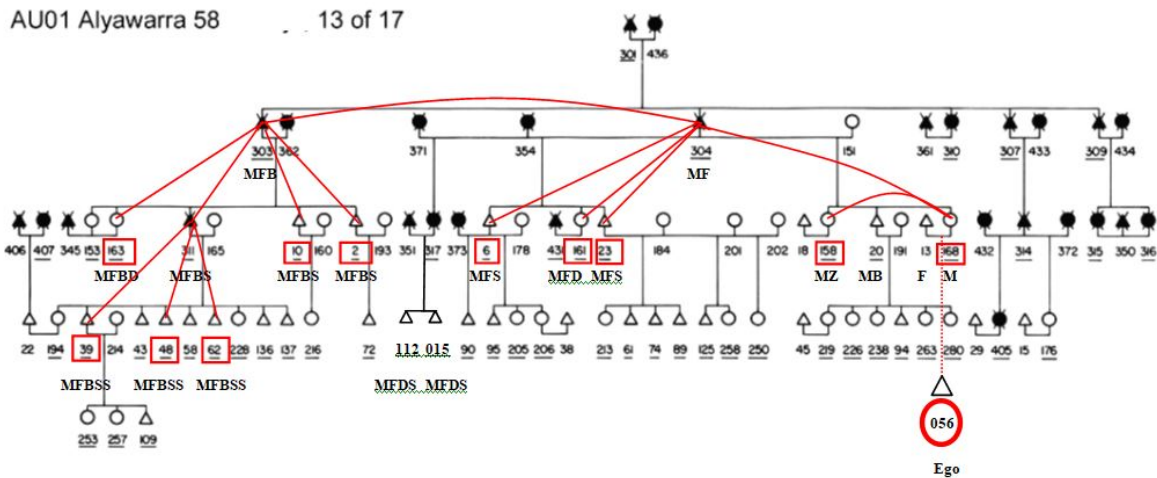


Figure 3.3. C58 (11 red squares, 1 redundant red oval: n=11); links through MF.

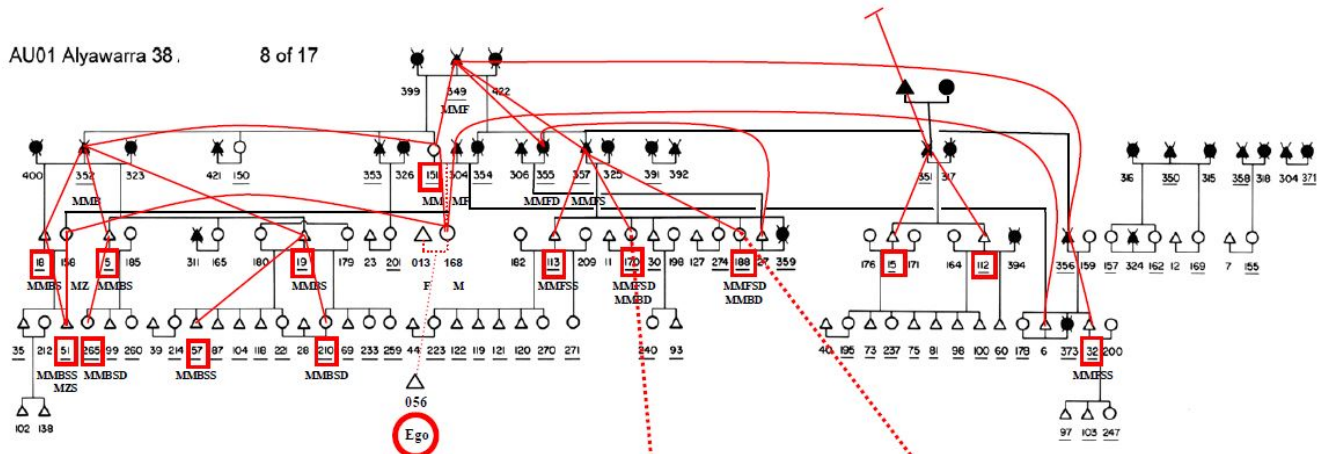


Figure 3.4. C38 (14 red squares, 1 redundant red oval: n=14); links through MM.

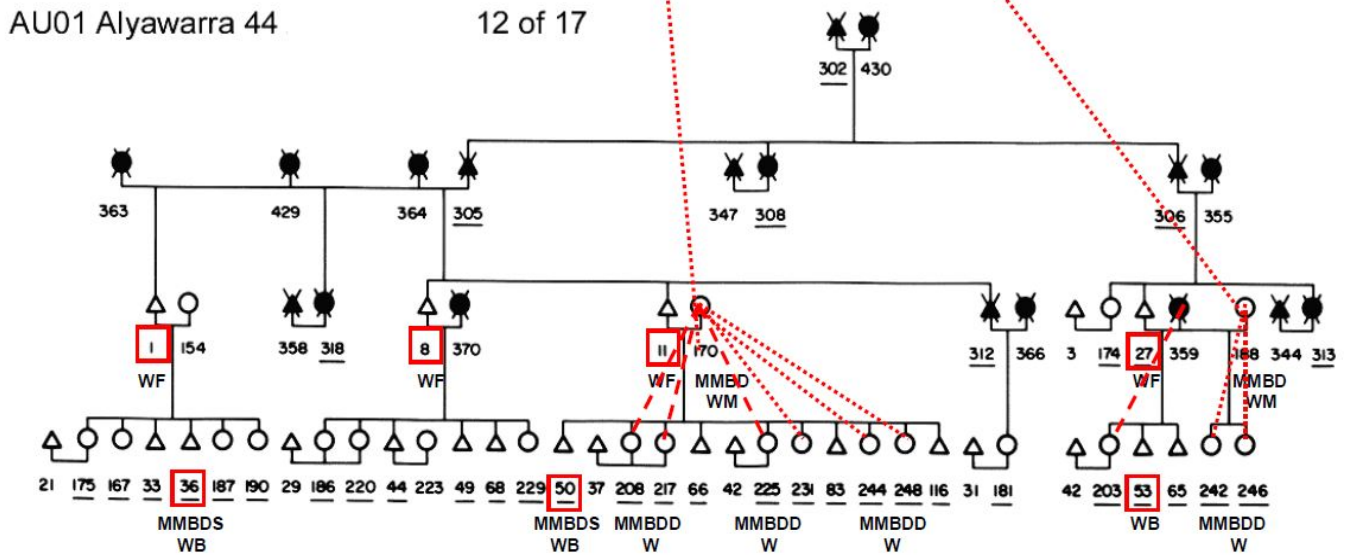


Figure 3.5. C44 (7 red squares); dashed lines to 4 actual spouses (W) of 056♂DJ's brothers; dotted lines to 5 potential spouses (W) of 056♂DJ.

In Figure 3.4 for C38, ascending traces passed from 056♂DJ through M (168♀DJ) to MM (151♀JM) to MMB and MMBD. MMBD was M of 056♂DJ's preferred spouses, his 2nd cross cousins (MMBDD), as shown in Figure 3.4. 112♂JB, who played a major role in the circumcision, and 015♂BN his B were members of C38, but their links to people in the main body of the diagram were untraceable.

Figure 3.5 for C44 highlights 056♂DJ's potential wives who were identified during *MHaM* as young or unborn daughters of 170♀LL and 188♀AC, a pair of genetic sisters from C38 in Figure 3.4 who were married to men in C44. Some of his older brothers already had married 2nd cross cousins from the same families.

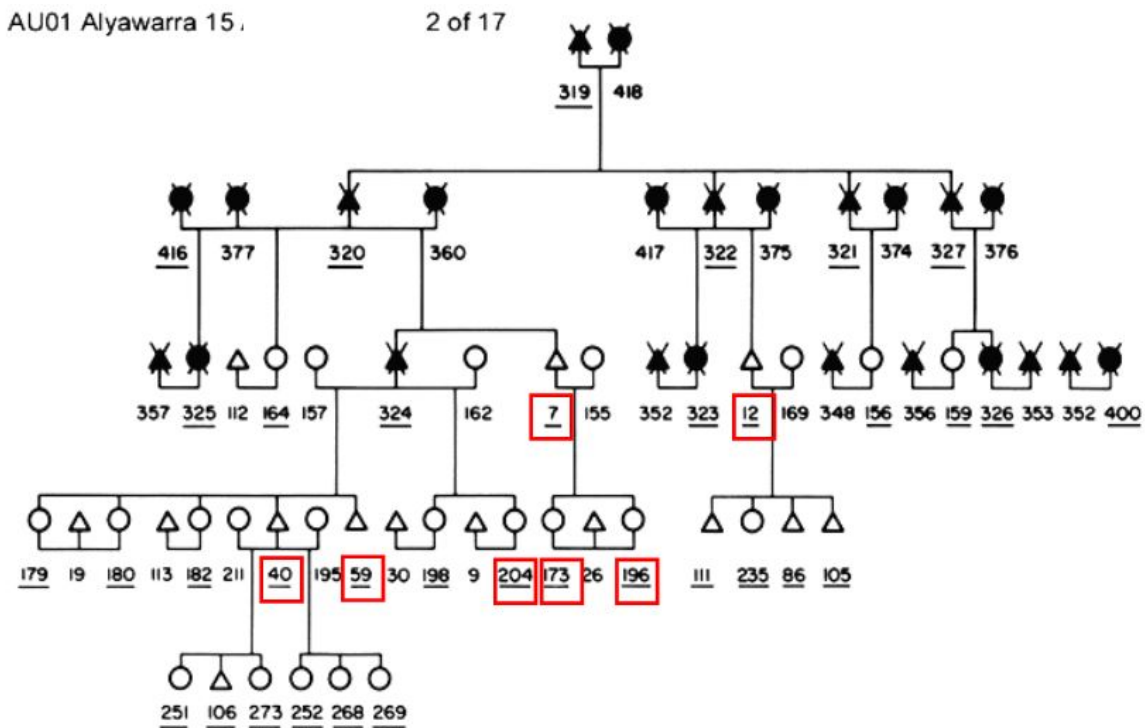


Figure 3.6. C15 (7 red squares); no direct biological links to 056♂DJ.

Figure 3.6 for C15 contains none of 056♂DJ's genetic kin, but it contains three significant errors. Three older men, 007, 012 and 324, who were brothers appear in the diagram to have had wives who were in the men's own generation, but in fact archival research demonstrated that all three of the men's wives were two generations below the men, a common anomaly that was invisible when genealogies were narrow and shallow.

Table 3.10 shows the distribution of kin types that linked 056♂DJ to all of the other actors within red squares in Figures 3.2-6. Group 1 included 7 biological siblings of 056♂DJ, all of

whom obviously shared the same parents. Group 2 included 4 people on 056♂DJ's father's side of the family, linked to 056♂DJ through his F, FB and FF. Group 3 included 26 members of mother's side of the family: viz., M and MZ, plus 9 diverse "cousins" linked to 056♂DJ through his MF, plus 15 more diverse "cousins" linked to him through his MM. Group 4 included 4 men who were WF; i.e., H or potential H of the designated M of the future wives of 056♂DJ. The presence or absence of one close, critical, contingent link - in this case the absence of 056♂DJ's FM - made a significant contribution toward shifting the numerical preponderance of cousins to M's side of the family throughout these diagrams.

Group	Id#	KinType	Figure	Count		
1	56	Ego	3.2	7		
	37	eB	3.2			
	38	eB	3.2			
	45	eB	3.2			
	46	eB	3.2			
	1184	eZ	3.2			
	236	yZ	3.2			
2	13	F	3.2	4		
	42	FBS	3.2			
	21	FFBSS	3.2			
	64	FFBSSS	3.2			
3	168	M	3.3	26		
	158	MZ	3.3			
	161	MFD	3.3			
	6	MFS	3.3			
	23	MFS	3.3			
	163	MFBD	3.3			
	10	MFBS	3.3			
	166	MFBS	3.3			
	39	MFBS	3.3			
	48	MFBS	3.3			
	62	MFBS	3.3			
		151	MM		3.3	
		5	MMBS		3.3	
		18	MMBS		3.3	
19		MMBS	3.3			
36		MMBDS / WB	3.5			
50		MMBDS / WB	3.5			
53		MMBDS / WB	3.5			
210		MMBSD	3.4			
265		MMBSD	3.4			
51		MMBSS	3.4			
57		MMBSS	3.4			
170		MMFSD / MMBD	3.4			
188		MMFSD / MMBD	3.4			
32		MMFSS	3.4			
113		MMFSS	3.4			
4	1	WF	3.5	4		
	8	WF	3.5			
	11	WF	3.5			
	27	WF	3.5			
5	15	Don't know	3.4	2		
	112	Don't know	3.4			
Column Total				43		

Table 3.10. Summary of shortest known genealogical kin type links between Ego 056♂DJ and 42 other actors in *MHaM*.

All of the data that represents individuals in these genealogical diagrams came directly from the individuals thus represented and from members of their immediate families, with rare assistance to fill in a few gaps provided by other directly relevant senior members of the population. At no time did I rely on one or a few "key informants" or other "experts". The Alyawarra as a whole provided the data which they had learned throughout their lives. With their guidance and assistance, I simply recorded and reformatted it.

Moieties.

Vertical descent moieties. Each of the biological families represented in the genealogical diagrams of Figures 3.2-6 constituted a Country that descended patrilineally from an apex in Figure 3.1. Likewise the 27 Countries in Figure 3.1 coalesced to form the 7 patrilineal descent groups K' through Q' labeled at the bottom of that Figure. Similarly – but not shown in Figure 3.1 - the seven descent groups coalesced to form two more-or-less equivalent subgroups, optimally of about the same size, generally called sides or halves or moieties from the Anglo-French *moitè* meaning "a half" or "a part of something". Thus in the early days or perhaps more recently, the Dreamings divided into two patrilineal descent moieties, each encompassing approximately half of the Countries in a language group or regional population.

For obvious reproductive reasons, males traditionally married females; i.e. the sexes were traditionally exogamous (out-marrying). For less obvious sociological reasons, Alyawarra patrilineal moieties were similarly exogamous: male members of one half were expected to marry female members of the other half. The prohibition automatically blocked men from marrying genetic and classificatory FZ, Z and D all of whom were members of the men's own patrilineal descent line.

Age biased marriage moieties. A man in one patrimoiety was not permitted to marry just any randomly selected woman in the other patrimoiety. From an Alyawarra perspective it was just as problematic for a man to marry a woman in his M's or D's generation levels as it was for him to marry into his own patrimoiety. Thus his own generation level into which he could marry, and the two generation levels adjacent to his own into which he could not marry, constituted two endogamous (in-marrying) moieties called either marriage or generation moieties, with ego and his own wife in one, his F and M, and his S and D, in the other. In Figure 3.2, an even-numbered marriage moiety is G.0, and an odd-numbered marriage moiety with two components is G+1 and G-1. Countries were aligned horizontally on G+2, G+1, G.0, G-1, G-2 and so on. When a G.0 man had no appropriate potential spouse in G.0 of another Country, he could skip the adjacent generation level G-1 to marry someone in even numbered generation G-2, generally younger than someone in G+2.

The matter of relative age becomes a major issue here. Table 3.11 shows that mean parental GENERATION INTERVALS and mean wife-husband (W<H) age differences in Australian Aboriginal societies were anomalous when compared with other human societies. Mean maternal generation intervals were and are approximately 28 years for women worldwide and 31 to 32 years for non-Australian Aboriginal men worldwide, yielding a mean W<H age difference of about 4 years in non-Australian Aboriginal societies and less than 3 years in 20th century United States society (Rolf and Ferrie 2008, Fitch and Ruggles 2004). But in Australian Aboriginal societies, the

worldwide standard maternal generation interval of about 28 years was paired with an anomalous paternal generation interval of 42.6 years that corresponds to a mean W<H age difference of 14.6 years (Fenner 2005, Binford 2001).

	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 3.11. Mean parental generation intervals and spousal age differences. Approximate values based on data from 191 nations (Fenner 2005) and 157 hunter-gatherer societies (Binford 2001: Table 4.07)

Spencer and Gillen (1899:558-560) provided a clear explanation for the large W<H age difference among the Aranda, and it seemed to apply reasonably well to the Alyawarra. They described “the well established custom in accordance with which every woman in the tribe is made *tualcha mura* with some man.” I roughly paraphrase and interpret their description as follows. At the time of a boy’s circumcision, a young woman, perhaps of the boy’s own age, was identified as the mother of a young or unborn girl whose genealogical and kinship relations qualified the child to become the boy’s first wife. Assuming that the baby girl was born somewhere near the time when the boy was circumcised, the result when the girl was old enough to marry would be a mean W<H age difference of about 14 or 15 years. Thus the anomaly was due largely to the delayed marriage of men who were circumcised at approximately 14 years and spent the following 14 years in intensive training in their Dreamings and at least theoretically were celibate (also see Guhr 1963, Denham 2012:15-16).

Upon reaching sexual maturity, boys were circumcised and girls were married. The circumcision of a boy followed by his first 14 years of training in the Dreamings with virtually no possibility of marrying at that time stood in sharp contrast with the marriage of a girl of 14 followed by her first 14 years of childbearing. An ethnographic tradition of focusing on boys who got circumcised and ignoring girls who got pregnant yielded a peculiar picture of biological reality.

Due to the longstanding Western assumption that generation intervals everywhere are about the same for men and women, it has been difficult for Western observers to grasp, or even notice, the many implications of this systematic disjunction. Correcting the distortion is an objective of this paper.

Diagonal matrimoieties, subcommunities and residential group compositions. The intersection of “vertical” exogamous patrimoieties and “horizontal” (but age biased) endogamous marriage moieties yielded “diagonal” exogamous matrilineal descent moieties. The obvious vertical moieties dealt mainly with patrilineal descent patterns, the slightly less obvious horizontal moieties dealt mainly with marriages patterns, and the nearly invisible diagonal moieties dealt largely with residential patterns in the organization of households, subcommunities and camps.

Primary residents of alugas were young women who had never been married and older widows who had not remarried after a husband’s death. Secondary residents were married women who lived in nearby anoardegans in an alugera-centered subcommunity with their husbands and young children, but actually spent a great deal of time almost every day at one specific neighboring alugera. This congeries of women – young, old, married, unmarried – almost always constituted a tight genealogical and genetic kinship network whose core members from youngest to oldest were: young children and their older sisters and parallel cousins; their mothers and mother’s sisters; mother’s mother; mother’s mother’s mother; and very rarely their MMMM, plus classificatory kin in some of those categories. A patrilineal descent line was easy to detect because all of its male members belonged to the same named Country, but a matrilineal descent line was more difficult to detect because female members belonged to a diverse group of Countries based on inheritance from their fathers, not from their mothers.

A small camp with fewer than perhaps 25 residents generally had only one alugera-centered subcommunity. As camps grew larger to populations of perhaps 125, the number of such alugas and their affiliated subcommunities increased to perhaps four or five, each with a different matrilineal descent line at its core. Men who were married to women who were affiliated with one alugera belonged to the opposite patrimoiety but not necessarily to the same Country.

In Part 1 of this paper, the faint background schematic diagram in Figure 1.2 shows genealogical relations among all individuals and families in Gurlanda camp on one particular day. Each quadrant shows the members of one alugera-centered subcommunity. Within each quadrant, residents of the alugera are encircled in red and residents of the matrilineally affiliated anoardegans are encircled in black. My earlier publications (Denham 2013, 2014, 2015) show ground plans of camps, genealogical diagrams of residential groups and group affiliations within subcommunities.

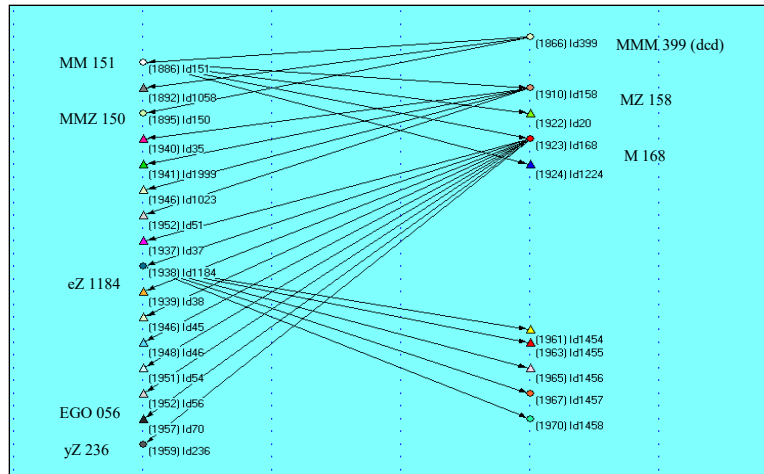


Figure 3.7. Matrilineal descent line of 056♂DJ with (Years of Birth).
Read zigzag from top to bottom: begin at 399 and end at 056.

From a different perspective, Figure 3.7 shows the matrilineal descent line of 056♂DJ. At top-right, his earliest known female ancestor was MMM 399; at top-left were his MM 151 and MMZ 150; at mid-right were his MZ 158 and M 168; at bottom-left were eZ 1184, Ego 056 and yZ 236. All except MMM 399 (deceased) and MMZ 150 appeared on the genealogical diagrams in Figures 3.2-4 and were actors in *MHaM*.

Since Aboriginal men seem to have rarely discussed matrilineal descent with anthropologists, matrilineal descent moieties have been deliberately excluded from consideration by some students of Aboriginal kinship due to the fallacious assumption that: “If the natives don’t mention it, it isn’t important.” But the answer you get (or don’t get) generally depends on how you ask the question.

Without delving deeply into this contentious subject, suffice it to say that patrilineal descent moieties yielded direct social analogs of the exclusively paternal genetic inheritance of Y-chromosomes, while matrilineal descent moieties yielded direct social analogs of the exclusively maternal genetic inheritance of mtDNA. Thus presumably by coincidence, these basic components of Alyawarra social structure directly paralleled some equally basic underlying components of the society’s biological structure.

Sociocentric section terms.

Among the Alyawarra, moieties were unnamed but the four spaces where vertical (paternal: P1,P2), horizontal (marital: R1,R2) and diagonal (maternal: M1,M2) moieties intersected were named. The names of the intersection points, ordinarily called “sections”, were Kamara (K),

Pityara (P), Burla (B) and Ngwariya (N). Learning the rules governing sections, plus the section membership of everyone in the society, were not trivial pursuits.

In Figure 3.8, Ego (056♂DJ) and his genetic siblings were born into Ngwariya section. Since his parents had married in accordance with section marriage rules, his F's section was Pitjara, his M's was Kamara and his potential spouse's was Burla. Section terms were sociocentric; i.e., a person who was born into one of these social categories ordinarily stayed in it permanently, and was referred to by that term by everyone in the society, somewhat analogous to "Smith" as an English language surname (family name) for men. The table in the caption of Figure 3.8 rotates through all permutations of the Alyawarra section terms.

In Figure 3.8, the odd numbered marriage moiety (G+3, G+1, G-1, G-3) of which 056♂DJ's F and M were members corresponded to Kamara-Pityara sections, while the even numbered marriage moiety (G+4, G+2, G.0, G-2, G-4) corresponded to Burla-Ngwariya sections.

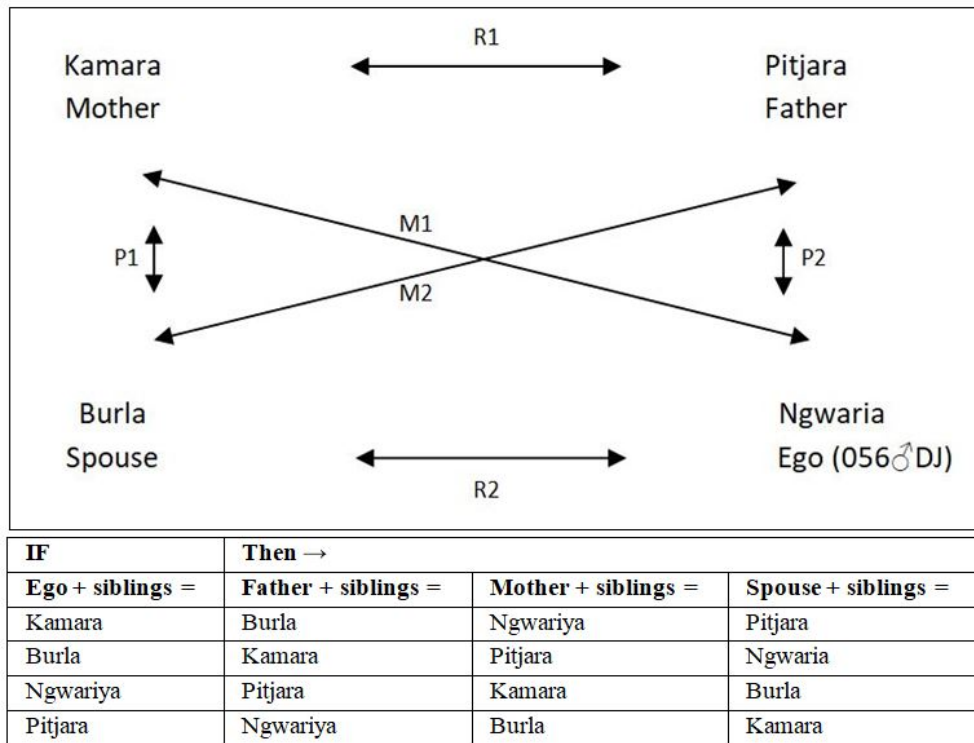


Figure 3.8. Generic key to Table 3.1, Col 10-13. Sociocentric section terms. Graphic key to section and moiety memberships.

Similarly, the patridescent moiety of which 056♂DJ and his father 013♂JJ were members corresponded to Pityara-Ngwariya sections, while the patridescent moiety of which his M and his W were members corresponded to Kamara-Burla sections.

The fact that the descent and marriage moieties were unnamed was irrelevant since ambiguous names of the moieties would have been redundant with four unambiguous names of the section pairs. Among the Alyawarra, explicit segmentation of the society stopped at the section level, but implicit segmentation followed the not-so-old Aranda tradition of dividing each section into two subsections that the Aranda and other nearby language groups named explicitly. Thus the degree of precision and refinement – as well as the verbal and logical complexity – of the multidimensional hierarchical structure could expand unabatedly.

Furthermore, multinational aspects of Aboriginal societies in Central Australia and beyond emerged clearly in the interlinkage and inter-translatability of section and subsection terms across language group boundaries; i.e., the Alyawarra were not an idiosyncratic isolate but were representative of an extended cluster of societies with interconnected multilayered relational grids. Understanding how section terms worked both locally and globally were prerequisites for navigating successfully among multiple Countries, section systems, language groups, and Dreamings.

Among other uses, these sociocentric section terms were preferred address terms, while egocentric kinship terms (see below) were preferred reference terms. For example, to introduce his father to me, 056♂DJ said while waving his hand: “Hey Pityara [013♂JJ], come over here.” Then he said to me: “This old fellow [013♂JJ] is my agngiya Father!”

Egocentric kinship terms.

Egocentric kinship terms are defined genealogically to fit close genetic kin, are extended to encompass distant and remote classificatory kin, and ultimately are stretched to encompass all Aboriginal people in networks of universal kinship. Table 3.12 shows how these terms should work ideally, while Figure 3.9 and Tables 3.13 – 14 and accompanying text show how they worked in the imperfect world of *MHaM*. Alyawarra men learned both sides of the coin.

Table 3.12 is packed with information. It presents 4 explicit (named) sections (A,B,C,D) and 2 implicit (unnamed) divisions of them (1,2) yielding 8 implicit unnamed subsections, corresponding to the section and subsection divisions described above. Next it includes 22 dyadic egocentric kinship reference terms with kin term codes used by male speakers, accompanied by glosses or definitions of the terms expressed in kin type codes. By convention, the speaker is “ego” and the person to whom the speaker refers is “alter”. The far right column

Sub-section	Male ego's reference term code	Male ego's reference term for Alter	Glosses based on genetic male kin types, then extended to classificatory kin	Alter's reciprocal term code used by male and female alters
A2	6	agngiya	F	16
	7	aweniya	FZ	16
	16	aleriya	S/D	6+,7*
A1	10	awaadya	eB	12
	11	anguriya	eZ	12
	12	adiadya	yB, yZ	10+, 11*
	1	arengiya	FF/FFZ, SS/SD	1
B2	18	anowadya	MMBDD, FFZSD Theoretically optimal W. But W's kin type is negotiable and includes MBD in the majority, plus FZD, MMBDD, MBDDD all of which are rare. When married to ego, all of these kin types are called anowadya. No bilateral sibling exchange marriages occur.	18
	21	amburniya	MMBDS, FFZSS Theoretically optimal WB. But WB's kin type depends upon W's kin type, therefore is highly variable (see above).	21
	22	andungiya	HZ/BW Affinal term used only by female egos.	22
	4	aburliya	FM/FMB, ZSS/ZSD, MBDDD/MBDDS	4
	17	umbaidya	FMBS/FMBD, FFZS/FFZD, ZS/ZD	8*,9+
C2	19	muriya	MMBD/MMBS, MFZD/ MFZS, MBDS/MBDD, FZDS/FZDD	19
	23	aneriya	BWM/DHZ Affinal term used by female egos only.	23
C1	2	anyainya	MM/MMB, ZDS/ZDD Between G.0 and G.±2, KT2 is self-reciprocal .	2
	3	aidmeniya	MMBSS/MMBSD, FFZDS/FFZDD Within G.0, KT2 is reciprocal with KT3.	2
D2	13	angeliya	MBS/FZS	13, 14
	15	adniadya	MBS (applied to genetic MBS only)	13, 14
	14	algyeliya	MBD/FZD	13, 15 / 14
	5	adardiya	MF/MFZ, DS/DD, MBSSS/MBSSD	5
D1	8	amaidya	M, FZSD	17*
	9	abmarliya	MB, FZSS, MBSS	17+

Table 3.12. Sociocentric terms: explicit sections (marriage: $A \leftarrow B \leftarrow C \rightleftarrows D$), implicit subsections (descent: $1 \leftrightarrow 2$). Egocentric terms: 22 standard dyadic reference terms with ideal glosses and reciprocals. The Table is simplified to show terms used by male egos (only 2 female egos are included) for genetic and classificatory, male and female alters. Glosses use genetic kin types (only 2 affinal kin types are included).

lists reciprocal kinship terms that alters should use in response to egos' reference terms. The table as a whole contains implicit rules that partially governed descent and marriage. The caption and internal annotations, plus the discussion that follows, offer further clarification.

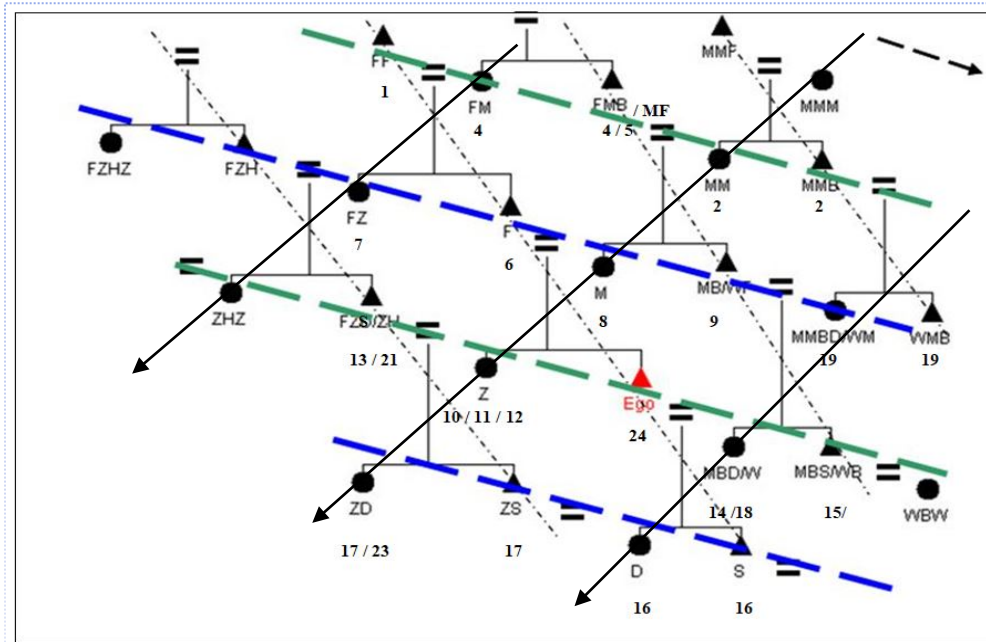


Figure 3.9. Alyawarra numerical kinship term codes superimposed on age biased diagram with helical wrap-around omitted. Alphabetic kin type codes from Table 3.8, numeric kinship term codes from Table 3.12. Blue/green: alternating marriage moieties; black dashed: alternating patrimoieties; black solid: alternating matrilineal descent. See Denham (2012) for a detailed discussion of age biased kinship,

Figure 3.9 offers one of several possible representations of the 22 Alyawarra terms in Table 3.12, superimposed on a hypothetical genealogical diagram that does not represent real people as in Figures 3.2-6. Rather, Figure 3.9 depicts an idealized distribution of some of the Alyawarra kinship terms. In the Figure, kinship terms are represented by numerical codes defined in Table 3.12. For example, (KT-06,08,14) are located just below corresponding alphabetic kin type codes (F, M, MBD). The distribution of terms is based on logical or definitional relations as seen by male speakers represented by Ego, the red triangle (I added "24-self", not an Alyawarra term but one of my own creation, by which each person referred to himself or herself). Patrilineal descent lines in Countries coalesce to form patrimoieties denoted by dashed black-and-white lines. Similarly, solid diagonal black lines coalesce to form matrilineal descent, while dashed blue and green lines form marriage moieties.

The age bias that shaped the blue and green marriage moieties corresponds to the same feature depicted by data for the population as a whole in Figure 3.1. Preferred spouses were 1st or 2nd

Ego ↓	Alter →	001	002	003	004	005	006	007	008	009	010	011	012	013	014	018	112
001	24-Self	10-eB	13-MBS/FZS	17-ZS	21-WB/ZH	10-eB	16-S	12-yB	13	10-eB	12-yB	19-MMBS/WMB	21-WB/ZH	17-ZS	21-WB/ZH	17-ZS	
002	12-yB	24-Self	13-MBS/FZS	17-ZS	21-WB/ZH	10-eB	19-MMB S/WMB	12-yB	13	12-yB	12-yB	19-MMBS/WMB	21-WB/ZH	17-ZS	21-WB/ZH	17-ZS	
003	9-MB	9-MB	24-Self	6-F	3-ZDS	9-MB	17-ZS	9-MB	10-eB	9-MB	9-MB	17-ZS	12-yB	19-MMBS/WMB	3-MMBSS	19-MMBS/WMB	
004	9-MB	9-MB	16-S	24-Self	16-S	9-MB	26	9-MB	19-MMBS/WMB	19-MMBS/WMB	9-MB	12-yB	6-F	12-yB	16-S	12-yB	
005	21-WB/ZH	21-WB/ZH	2-MMB	6-F	24-Self	21-WB/ZH	9-MB	21-WB/ZH	10-eB	21-WB/ZH	21-WB/ZH	9-MB	10-eB	6-F	10-eB	6-F	
006	12-yB	12-yB	13-MBS/FZS	17-ZS	21-WB/ZH	24-Self	19-MMB S/WMB	12-yB	13-FZS/MBS	12-yB	12-yB	19-MMBS/WMB	21-WB/ZH	17-ZS	21-WB/ZH	17-ZS	
007	6-F	19-MMBS/WMB	9-MB	21-WB/ZH	17-ZS	19-MMBS/WMB	24-Self	19-MMBS/WMB	9-MB	19-MMBS/WMB	19-MMBS/WMB	12-yB	9-MB	9-MB	17-ZS	21-WB/ZH	
008	10-eB	10-eB	13-MBS/FZS	17-ZS	21-WB/ZH	10-eB	21-WB/ZH	24-Self	21-WB/ZH	10-eB	12-yB	19-MMBS/WMB	21-WB/ZH	17-ZS	21-WB/ZH	17-ZS	
009	21-WB/ZH	15-MBS	12-yB	19-MMBS/WMB	12-yB	15-MBS	17-ZS	21-WB/ZH	24-Self	15-MBS	21-WB/ZH	17-ZS	12-yB	16-S	12-yB	29	
010	10-eB	10-eB	13-MBS/FZS	17-ZS	21-WB/ZH	10-eB	19-MMB S/WMB	12-yB	13-FZS/MBS	24-Self	12-yB	19-MMBS/WMB	21-WB/ZH	17-ZS	21-WB/ZH	17-ZS	
011	10-eB	10-eB	13-MBS/FZS	17-ZS	21-WB/ZH	10-eB	19-MMB S/WMB	10-eB	21-WB/ZH	10-eB	24-Self	19-MMBS/WMB	21-WB/ZH	17-ZS	21-WB/ZH	17-ZS	
012	19-MMBS/WMB	19-MMBS/WMB	9-MB	9-MB	17-ZS	19-MMBS/WMB	10-eB	19-MMBS/WMB	9-MB	19-MMBS/WMB	19-MMBS/WMB	24-Self	9-MB	21-WB/ZH	17-ZS	21-WB/ZH	
013	21-WB/ZH	21-WB/ZH	10-eB	16-S	12-yB	21-WB/ZH	22	21-WB/ZH	10-eB	21-WB/ZH	21-WB/ZH	20	24-Self	6-F	12-YB	29	
014	9-MB	9-MB	19-MMBS/WMB	10-eB	16-S	9-MB	13-FZS/MBS	9-MB	6-F	9-MB	9-MB	21-WB/ZH	16-S	24-Self	16-S	12-yB	
018	21-WB/ZH	21-WB/ZH	2-MMB	6-F	10-eB	21-WB/ZH	9-MB	21-WB/ZH	10-eB	21-WB/ZH	21-WB/ZH	9-MB	10-eB	6-F	24-Self	6-F	
112	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	24-Self

KEY	Disregard			Match				Mismatch
	Missing Data gray	Operator error pink	"Self" purple	Exact match green	Omaha orange	Alternate route light blue	Honorifics dark blue	Mismatch white
Raw scores	30	6	16	178 / 196 = 69.5%	12	2	4	8
Subtotals	52 / 256 = 20.3%			196 / 256 = 76.6%				8 / 256 = 3.1%
Total	16 x 16 = 256							

Table 3.13. Actual reciprocal kinship reference terms used by 16 men in *MHaM* age class 5.

cross cousins; i.e., genetic or classificatory cousins through ones MB or FZ, which included MBD, MMBDD and FZD. Due to the 14 year H>W age bias, Alyawarra men ordinarily married MBD and MMBDD who on average were 14 years younger than themselves, but only rarely married FZD who on average were 14 years older than themselves.²²

Table 3.13 deals not just with terms and rules, but goes beyond that to introduce the first of several statistical aspects of real reciprocal kinship term usage, thereby highlighting the sometimes confusing flexibility of kinship term applications within *MHaM*. It deals narrowly with actual reciprocal kinship reference terms used by all 16 men in age class 5 in *MHaM*. Each cell in Table 3.13 is defined by Ego's Id# in the left column and alter's Id# in the top row. For example, begin by selecting an ego (e.g., 001) and an alter (e.g., 004). The cell at the intersection of ego 001 and alter 004 shows 17-ZS; i.e., ego 001 refers to alter 004 as his sister's son. Now reverse their roles: ego 004 and alter 001 intersect at a cell that shows 9-MB; i.e., ego 004 refers to alter 001 as mother's brother. According to Table 3.12, which shows 17-ZS and 9-MB as reciprocals, the pattern in this case perfectly matches the model.²³

Among the Alyawarra, such perfection was found quite often but mismatches occurred. In Table 3.13, the 178 green cells contain perfect matches between expected and observed terms. The table contains a good bit of "noise"; i.e., aspects of reality that are disregarded in studies that focus on ideal patterns. But most of the noise can be made tractable without damaging the data. That noise included several idiosyncratic or local problems and several systematic deviations from the optimal pattern.

Local issues included: random errors by egos, alters and the ethnographer (me); "wrong" marriages that violated section traditions (only 1 found); genuine disagreements about linkages between ego and alter; multiple concurrent genealogical linkages (W=14-MBD = 14-FZD = 18-MMBDD = 4-MBDDD); consanguineal and affinal (MBD=W) links to the same alter; optional use of honorifics (001 and 010 referred to each other as 10-eB); intermarriages between language groups (two errors by 004 whose first language was Aranda); missing data (no terms collected from 112), and so on.

Systematic deviations included: the previously described 14-year W<H age bias that precluded systematic bilateral sibling exchange marriages (MBD≠FZD); Omaha skewing in which the

²² The Dravidianate / Kariera / Aranda kinship type or pattern is among the most basic, interesting and challenging in human societies. For details, see a rich literature that includes Radcliffe-Brown (1931), Rose (1960), Guhr (1963), Levi-Strauss (1969), Godelier, Trautmann, Tjon Sie Fat (1998), Allen (2007), Hage (2007), McConvell (2012), Denham (2012), Read (2013).

²³ See Denham and White (2005) for details concerning research methods used to record these data; see Denham 2016b for an interactive version of the kinship applications data file.

same term could be used optionally for MB, MBS and MBSS and was present between 003 and six alters (001,002,006,008, 010,011) in this sample; a decline in accuracy associated with language group exogamy and concomitantly increasing genealogical and geographical distance between ego and alter (Green 1998:13-15, Denham 2013:76, Jefferies 2018); and the use of triadic kinship terms. I focused on dyadic terms for I did not know that triadic terms existed in 1971-72, and am not qualified to discuss them in this paper. See Green, J. (1998:41-45) and Blythe, J. (2018:431-471) for discussions of triadic terms among the Alyawarra and other language groups. Finally KT2 anyainya has two different reciprocals as shown in Table 3.12. When ego referred to a grandparent or a grandchild with KT2, the term was self-reciprocal: i.e., ego referred to alter as KT2 and alter referred to ego as KT2, as was usual with other grandkin terms. But when ego referred to MMBSS/MMBSD or FFZDS/FFZDD with KT3 aidmeniya, alter responded with KT2, an anomaly that I still do not understand but is shown unambiguously in Denham et al (1979:11, Table 4).

When I adjust for contingencies at the bottom of Table 3.13, only 4 pairs of terms in that sample appear to contain mismatches, presumably one “error” in each pair but I do not know which one. In this context, the error rate of about 3% is remarkably low. In my opinion, the richness of anomalous data says more about life among the Alyawarra than does the sterility of ideal data with its “noise” suppressed.

Table 3.14, Col.1-4, shows that 056♂DJ (ego) was a member of age category 1, the even numbered marriage moiety G0, and Ngwariya section N4. Those values were constant in all 57 records. Col.5 holds the kinship term with which ego referred to each of the alters including himself. Col.6-12 holds attributes for each alter as shown in the Key to Table 3.14.

Table 3.14. Kinship term reciprocals (Col5-6) between 056♂DJ (Col1) and 56 other actors (Col12) in *MHaM*. Col.1-5 apply only to 056♂DJ; Col.6-12 apply to 56 other actors. 13 remaining actors omitted due to noise.

KEY to Table 3.14.												
Column	Variable and values				Column	Variable and values						
0	Record #				7	Alter’s section: See Table 3.8						
1	Ego’s Id# 056♂DJ				8	Alter’s Country: see Table 3.7						
2	Ego’s age category: see Table 3.3				9	Alter’s generation: G0 = even, G1 = odd						
3	Ego’s marriage moiety: G0 = even				10	Alter’s age category: see Table 3.3						
4	Ego’s section: 4N = ngwariya				11	Alter’s sex: 1 = ♂, 2 = ♀						
5	Ego’s term for alter: see Table 3.12				12	Alter’s Id#: 1 – 236						
6	Alter’s term for ego: see Table 3.12											

0. R#	1. Egold#	2. eAgeCat	3. eGen	4. eSection	5. eKinTerm	6. aKinTerm	7. aSection	8. aCountry	9. aGen	10. aAgeCat	11. aSex	12. AlterId#
1	56	1	G0	4N	9-MB	17-ZS	1K	44	G1	5	1	1
2	56	1	G0	4N	9-MB	17-ZS	1K	58	G1	5	1	2
3	56	1	G0	4N	9-MB	17-ZS	1K	58	G1	5	1	6
4	56	1	G0	4N	9-MB	17-ZS	1K	44	G1	5	1	8

5	56	1	G0	4N	9-MB	17-ZS	1K	58	G1	5	1	10
6	56	1	G0	4N	9-MB	17-ZS	1K	44	G1	5	1	11
7	56	1	G0	4N	9-MB	17-ZS	1K	58	G1	4	1	23
8	56	1	G0	4N	9-MB	17-ZS	1K	44	G1	4	1	27
9	56	1	G0	4N	17-ZS	9-MB	1K	15	G1	3	1	40
10	56	1	G0	4N	17-ZS	9-MB	1K	15	G1	2	1	59
11	56	1	G0	4N	8-M	17-S	1K	30	G1	5	2	152
12	56	1	G0	4N	8-M	17-S	1K	58	G1	5	2	158
13	56	1	G0	4N	8-M	17-S	1K	58	G1	5	2	161
14	56	1	G0	4N	8-M	17-S	1K	58	G1	5	2	163
15	56	1	G0	4N	8-M	17-S	1K	58	G1	4	2	168
16	56	1	G0	4N	8-M	9-MB	1K	15	G1	4	2	173
17	56	1	G0	4N	8-M	9-MB	1K	15	G1	3	2	196
18	56	1	G0	4N	17-ZD	9-MB	1K	41	G1	3	2	189
19	56	1	G0	4N	17-ZD	9-MB	1K	15	G1	2	2	204
20	56	1	G0	4N	6-F	16-S	2P	31	G1	5	1	3
21	56	1	G0	4N	6-F	16-S	2P	38	G1	5	1	5
22	56	1	G0	4N	6-F	16-S	2P	38	G1	5	1	18
23	56	1	G0	4N	6-F	16-S	2P	38	G1	4	1	19
24	56	1	G0	4N	6-F	16-S	2P	31	G1	4	1	26
25	56	1	G0	4N	16-S	6-F	2P	61	G1	2	1	41
26	56	1	G0	4N	16-S	6-F	2P	43	G1	2	1	64
27	56	1	G0	4N	6-F	16-S	2P	43	G1	5	1	13
28	56	1	G0	4N	19-MMBS	19-MMBS	2P	42	G1	5	1	9
30	56	1	G0	4N	19-MMBS	19-MMBS	2P	42	G1	4	1	17
29	56	1	G0	4N	28-DK	28-DK	2P	38	G1	5	1	112
31	56	1	G0	4N	28-DK	19-MMBS	2P	38	G1	4	1	113
32	56	1	G0	4N	19-MMBS	28-DK	2P	38	G1	3	1	32
33	56	1	G0	4N	19-MMBD	19-MMBS	2P	38	G1	4	2	170
34	56	1	G0	4N	19-MMBD	19-MMBS	2P	38	G1	3	2	188
35	56	1	G0	4N	7-FZ	16-S	2P	73	G1	3	2	191
36	56	1	G0	4N	21-WB	21-WB	3B	15	G0	5	1	7
37	56	1	G0	4N	21-WB	21-WB	3B	15	G0	5	1	12
38	56	1	G0	4N	13-MBS	13-MBS	3B	41	G0	4	1	28
39	56	1	G0	4N	15-MBS	13-MBS	3B	58	G0	3	1	39
41	56	1	G0	4N	15-MBS	5-MF	3B	44	G0	3	1	36
40	56	1	G0	4N	15-MBS	13-MBS	3B	58	G0	2	1	48
42	56	1	G0	4N	1-FF	1-SS	4N	73	G0	5	1	14
43	56	1	G0	4N	10-eB	12-yB	4N	61	G0	5	1	4
44	56	1	G0	4N	10-eB	12-yB	4N	38	G0	4	1	15
45	56	1	G0	4N	10-eB	12-yB	4N	43	G0	4	1	21
46	56	1	G0	4N	10-eB	12-yB	4N	42	G0	4	1	29
47	56	1	G0	4N	10-eB	12-yB	4N	43	G0	3	1	37
48	56	1	G0	4N	10-eB	10-eB	4N	81	G0	3	1	31
49	56	1	G0	4N	12-yB	10-eB	4N	43	G0	3	1	42
50	56	1	G0	4N	10-eB	12-yB	4N	43	G0	2	1	46
51	56	1	G0	4N	24-Self	24-Self	4N	43	G0	1	1	56
52	56	1	G0	4N	2-MM	2-DS	4N	38	G0	5	2	151
53	56	1	G0	4N	11-eZ	12-yB	4N	61	G0	4	2	166
54	56	1	G0	4N	11-eZ	10-eB	4N	31	G0	2	2	207
55	56	1	G0	4N	11-eZ	10-eB	4N	38	G0	2	2	210
56	56	1	G0	4N	11-eZ	10-eB	4N	31	G0	2	2	218
57	56	1	G0	4N	12-yZ	10-eB	4N	43	G0	1	2	236

The patterns that appear in Table 3.14 say a great deal about the overall organization of *MHaM*. Manual unsupervised pattern detection procedures answered a simple “what if” question: What

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would I find if I linked a) the kinship terms that 056♂DJ applied to the other actors, and b) the reciprocal terms that the other actors applied to 056♂DJ, then sorted them by various demographic and organizational attributes?

After removing some noise and sorting the output, I made a few adjustments to fine tune the order of actors within each section. The only mismatches occurred in Rows 16, 17 and 41²⁴.

Col.7 shows that all people in Rows 1-19 belong to section 1 Kamara, in rows 20-35 belong to section 2 Pityara, in rows 36-40 to section 3 Burla, and in rows 42-57 to 4 Ngwaria. The following is a brief description of the members of each section.

1 Kamara section, R.1-19. All of the alters in this section belong to the odd numbered marriage moiety G+1 and to an assortment of Countries that shared the same section and marriage moiety. Rows R.1-10 were men and R.11-19 were nearly the same number of women. Within each sex, records appear in order of decreasing age category (5 → 1). In Col.5-6, 9-MB / 17-ZS constitute the pair of reciprocal kinship terms in R.2-19. The order in which these two terms appear depends on the relative ages of ego and alter. The people in this cluster included ego's genetic M (168), MZ (158) and MB (010) all of whom belonged to C.58, plus a broad assortment of classificatory M and MB who belonged to five different Countries dominated by C.58. A minor anomaly appears in R.1, Col.6. Thus I designate section 1K as ego's "mother's section".

2 Pityara section, R.20-35. Alters in this section belong to an assortment of Countries in the same section and marriage moiety dominated by C.38. R.20-32 were men and R.33-35 were a far smaller number of women. One pair of reciprocal terms that occurred 8 times was 6-F / 17-S; it denoted the father-son relationship between 056♂DJ, his genetic F 013♂JJ and several classificatory fathers. These 6-F pairs gave the cluster the appearance of ego's "father's section", but the situation in this case was much more complicated.

In addition to 8 pairs of 6-F / 16-S, there were 7 pairs of 19-MMBS / 19-MMBS that denoted a parent of ego's MMBDD; i.e., the optimal parent of ego's promised first wife. This set included 3 cases with incomplete data (included here deliberately despite the DK issue) due to the residency of these alters at Lake Nash Station, making them unavailable for kinship term elicitations at Gurlanda camp.

²⁴ Rows 16-17 contain a disagreement: 056 and all of his genetic brothers refer to 173 and 196, a pair of genetic sisters, as 8-M, while those two sisters refer to 056 and all of his brothers as 9-MB. The fact that all of the members of two sibling sets use the same mismatching terms suggests that they are computing their relationships via different routes or are using the Omaha skew. Row 41 contains a coding error (5-MF should be 13-MBS), probably made by me when I recorded the data.

All of the individuals shown in bold red type in Table 3.14 played central roles in the circumcision and promised first marriage of 056♂DJ. Most obviously, they included 013♂JJ who was his F, and 009♂BM (assisted by his genetic B 017♂AL), the manager of *MHaM*.

The three individuals included here despite their incomplete data were 112♂JB, 032♂BC and 113♂AM. They played “specialist” roles in the circumcision of 056♂DJ. Although I have no reciprocal kinship terms for the older man, 112♂JB, circumstantial (and circuitous) evidence suggests that he belonged with 032♂BC and 113♂AM, so I have placed him there reluctantly – but that may be incorrect. In any event, he introduced the agailba prancing dance at DG3 early on the first full day of *MHaM*. The last and by far the most dramatic performance of the dance occurred when 032♂BC did it with the circumcision blade between his teeth moments before he handed the blade to 113♂AM to cut the young man. 112♂JB pulled up 056♂DJ’s foreskin and inflated it, and 113♂AM used the blade that 032♂BC carried in his mouth to perform the circumcision at the very end of *MHaM*. In other words, these three men – all from C.38, all members of 2P section, all living at Lake Nash Station, and members of three different age categories – had three of the most striking (and perhaps most important) roles in the entire event.

Moving next to the women’s cluster at the bottom of 2P section, in rows R.33-34, we find the pair of genetic sisters, 170♀LL and 188♀AC, who were designated as the mothers – or mothers-to-be – of 056♂DJ’s first wife. Although their roles were less conspicuous than those of the other bold red actors, they seemed to be equally or perhaps even more important.

3 Burla section, R.36-41. 2P section contained only three women, but 3B section that occupies R.36-41 contained no women at all. All of the men in 3B section were ego’s WB or MBS and at a later time would share that section with a D of 170♀LL or 188♀AC, the future W of 056♂DJ. This was ego’s “wife’s section” even though she was absent, and it, like everything else in the paper, raises endless questions that I cannot answer.

4 Ngwariya section, R.42-57. The last section in Table 3.14 is occupied by 056♂DJ himself, his classificatory FF, his genetic MM, and 13 genetic and classificatory B and Z. Furthermore this section originally contained several other young men that I omitted because of incomplete or missing data. Included among them were an unknown number of ardwa andidya who were in training, and who performed the really vigorous dances at the beginning of *MHaM*. It was ego’s “own and siblings’ section”.

Behavioral observations.

Actors and actions per scene. Table 3.15 is a horizontal extension of the first 16 of 69 data records shown in Table 3.1. It repeats Table 3.1, Col. 1 and 2, then adds 35 columns of data

concerning the number of actions per actor that occurred during each act-and-scene of *MHaM*. Column headers use alphanumeric codes for acts and scenes, alphabetic codes for location types (BC=Business Camp), numeric codes for specific locations (BC1, BC2, etc.).

The number in each cell is a count of the recordable actions by each actor during each scene. For my purposes here, a “recordable action” occurred when an actor behaved within a scene in a way that resulted in my making a note of his or her behavior. The nature of the action was irrelevant. If it resulted in my making a note of it, then it qualified as a recordable action that I could count, analyze, tabulate, compare, etc. In other words, whenever I observed an actor do something that I could record, I added one more event to my collection of recordable actions. I believe that my note-taking corresponded closely but imperfectly with their actions, but in fact I am left to analyze my notes rather than their actions. While observing *MHaM*, I accumulated 703 recordable actions, 579 performed by identified males and 124 by identified females.

1	2	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62					
RC#	Id#	1.4. BC1	2.1. DG3	2.2.1. DG1	2.2.2. DG3	2.2.3. DG2	2.2.4. BC1	2.2.5. DG1	2.2.6. DG3	2.2.6.1. DG3	2.2.6.2. DG3	2.2.6.3. DG3	2.2.7. DG4	2.2.9. BC123	2.2.9.1. BC2	2.2.9.2. BC3	2.2.9.3. BC1	2.2.10. DG4	2.2.11. DG4	2.2.12.1. BC1	2.2.12.2.1. BC4	2.2.12.2.2. BC4	2.2.13. DG4	2.3.1. DG4	3.1. BC1	3.2. BC1	3.3. DG3	3.4. BC5	3.5. BC1	4.1. BC1+C43	4.2. BC1+C68	4.3. BC1+C44	4.4. DS41	4.5. DS42	4.6. DS38	4.7. DS44	5.1. DS61	Actor total	Total # scenes					
1	1													1		1																								13	6			
2	2			1										1		2				6			1			1											4			16	7			
3	3																																								1	1		
4	4				1									1	1		2			4												1						6		17	8			
8	5									1						1											4											3			9	4		
9	6																													1											2	2		
5	7														1	4								3				1		1		1									11	6		
6	8														1									1	1			1													4	4		
7	9	5	2			3				1			1														1	2			1				3	4					23	10		
10	10									1		4																														5	2	
11	11				4	2								1											1	1		1														10	6	
12	12									1					1	3												3	4	1		1										15	8	
15	13	4	2		1		2			1	1	1		1	1		2	2				8		5		3	3			5	1										43	17		
14	14													1	1		1																									1	5	5
13	18																																										10	1
16	112			1		4				2		1								3	5		2	2	3	10			1													39	13	

Tables 3.15. Number of actions per actor (first 16 actors) in 35 scenes of *MHaM*.

Table 3.15, row 1, shows that 001♂JA performed a total of 13 recordable actions in a total of 6 scenes, while column 47 shows that 6 of these 16 actors performed 19 recordable actions in scene 2.3.1 DG4. Row 72, not shown here, shows the number of unidentified ardwa andidja counted (c#) or estimated (e#) in 12 of the 35 scenes. I counted 169 unidentified participants and very conservatively estimated 80 more, yielding a total of 249 appearances of unidentified young men in those 12 scenes. I cannot analyze these numbers any further because of missing data, but I am absolutely certain that a lot of unidentified young men actively participated in the circumcision of 056♂DJ.

Recapitulation of Acts 1-5. Table 3.16 contains summary statistics for the 5 acts and their 35 constituent scenes, 3 principal location types, 69 male and female actors and 703 recordable actions. Acts 1 through 3 employed present day artistic representations of the Dreamtime and Dreamings that were recreated by living people. Acts 4 and 5 focused on ancestral Dreamings themselves and ancient items not made by living humans but descended from the ancestors.

1.Act #	2. # Scenes and sub-scenes per act	3. # Scenes at each Location Type			4. # Actors in each Act (actors often appeared in multiple acts)				5. # Actions per Act		
		BC	DG	DS	Male	Female	Row Total	Male c#/#	Male	Female	Row Total
1	1	1	-	-	3	-	3	-	10	-	10
2	21	8	13	-	41	19	60	c155 e80	434	92	526
3	5	4	1	-	22	7	29	c5	44	32	76
4	7	-	-	7	27	-	27	c9	75	-	75
5	1	-	-	1	4	-	4	-	16	-	16
Col Total	35	13	14	8	-	-	-	-	579	124	703

Table 3.16. Overview of events that occurred in conjunction with Circ1.

Act 1 consisted of only 1 scene. It summarized a series of preparatory actions by men and women that occurred over a period of 20 days, some at diverse locations in and near Gurlanda camp, others at BC1, an agiewa or workshop where 3 men performed 10 actions that taught ardwā andidja and me about activities that I would record later.

Act 2, which began five days before the circumcision of 056♂DJ and ended at the time of the circumcision, consisted of 21 scenes. It was an edited transcript of my materials covering the dramatic performances and intensive teaching associated with the circumcision. The materials included tape recorded notes and music, hand-written and typed notes, photographs, diagrams, maps, camp plans and census data. As shown in Table 3.16, Act 2 consisted of 13 scenes that occurred at dance grounds and 8 that occurred at business camps. In Act 2, 41 men performed 434 actions and 19 women performed 92; a total of 60 people performed 526 recordable actions. Sexually mixed groups participated in 7 scenes at dance grounds, while male-only groups participated in 6 scenes at dance grounds and in all 8 scenes at business camps.

Act 3 had 5 scenes, each a teaching event held in conjunction with all eight of the circumcisions. To the best of my knowledge none was exclusively associated with the circumcision of 056♂DJ. Three occurred at a men-only business camp, 1 at a women-only business camp, and 1 at a dance ground where men, women and children participated together.

Act 4 had 7 scenes, each a teaching event conducted for young men who had been circumcised in recent years. In the first 3, senior men introduced ardwa andidja and me to portable aljera that garbudas of the Countries stored in their residences and carried with them whenever they relocated their residences. In the last 4, senior men introduced ardwa andidja and me to stationary aljera that were concealed at secret and ostensibly permanent Dreaming sites scattered throughout the Sandover-Bundey River basin and adjacent hilly regions.

Act 5 consisted of only 1 scene, a brief demonstration of weather modification procedures conducted by ardwa elgwa and ardwa andidja. Using traditional knowledge, skills and technology derived directly from the Dreamings, they apparently generated rainfall during a drought, a feat not unlike cloud seeding in other societies²⁵.

Sex-age distribution of recordable actions. In my earlier discussion of the sex-age structure of the *MHaM* population, I said that the actor population was biased toward older males, therefore away from children and females. Table 3.17 confirms that point by focusing on actions, not on actors. The Table shows the number of recordable actions that I saw being performed by members of each sex-age class during *MHaM*. Omitting data for 056♂DJ, males in age classes 4 and 5 performed more than half of the recordable actions in *MHaM* ($342/600=57\%$), but males in age classes 1 through 3 contributed 134 (22.3%) of them and females contributed 124 (20.7%). Both of these smaller percentages are incompatible with the common assertion that circumcision and associated activities were done by old men to young boys as a manifestation of gerontocracy, a myth based on ignorance that dies hard.

²⁵ For discussion and references, see Wikipedia concerning “weather modification”.

Age Class	Sex	
	Male	Female
5	223	31
4	119	50
3	94	34
2	39	4
1*	1	5
Subtotals	476	124
Total	600	

Table 3.17. Sex-age distribution of people who performed recordable actions in *MHaM*.

* Age class 1 included 056♂DJ. Here I have omitted his data for 104 recordable actions.

Accelerating pace of actions. Table 3.18 suggests that the pace of 522 events that occurred during the 108 hours of *MHaM* accelerated steadily from beginning to end, building to a crescendo in the final scene. The Table is segmented into 6 time periods. On Day077, 056♂DJ was captured at about 18:00 hours and my recording began at that time. On Day078 through Day081, activities occurred at more-or-less any time of the day or night, so I treat those recording days as 24-hour periods. On Day 082, 056♂DJ was circumcised at about 06:00 hours and my recording of the last day's activities ended at that time.

Day#	Hours	Number of scenes	Number of recordable actions	Rate in actions per hour
077	6	2	17	2.8
078	24	3	65	2.7
079	24	5	85	3.5
080	24	5	119	5.0
081	24	5	139	5.8
082	6	1	97	16.2
Total	108	21	522	

Table 3.18. Rate at which recordable actions occurred in *MHaM*.

Part of the apparent acceleration in the right-hand column may have been an illusion based on my increasing experience as observer and recorder. Although I do not know how to control this problem under field conditions, I recognize that the real and apparent acceleration seen here was strikingly similar to that observed in *Koyaanisqatsi*.

Tracking the agailba theme. $11/35=31\%$ of the scenes in *MHaM* featured agailba; i.e., bundles of feathers from various species of birds whose sizes ranged from very large emu to much smaller cockatoos and galahs. They appeared as a recurring motif or theme with variations in a total of eleven scenes. In *MHaM* Act 2, which spanned six days, agailba were used on five days.

Although agailba was the name for large emu feather bundles that were inserted into the backs of dancers' belts for prancing dances, I never heard a name for small bundles made of smaller feathers that were attached to hats, adnardunja and sand paintings. Large and small seemed to be made the same way, but differences in bird species and the size and color of feathers may have put the finished products into separate Alyawarra categories. Since they looked alike and were used together, I treat them as two versions of agailba; the Alyawarra may have done it differently.

Table 3.19 is a chronological list of relevant parts of eleven scenes in which agailba appeared.

- | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2.2.2. DG3. 78:0920-1000. A large agailba was used by three men in repeated performances of the prancing dance.</p> <p>2.2.6.1. DG3. 079:0000-0100. A small agailba was incorporated into the body decoration of 056♂DJ.</p> <p>2.2.9.1. BC2. 080:1100-1530. A small agailba was inserted into a stick hat.</p> <p>2.2.9.2. BC3. 080:1350-1700. A small agailba was attached to an adnardunja for a lizard Dreaming.</p> <p>2.2.11. DG4. 081:0200-0630. A large agailba was used in the final rehearsal of the circumcision.</p> <p>2.3.1. DG4. 082:0130-0630. A large and a small agailba were used together at the time of the circumcision.</p> <p>3.1. BC1. 094. Several small agailba were used in a 3-dimensional sand painting.</p> <p>3.2. BC1. 103. Three small agailba were attached to the upper corners of a wananga.</p> <p>3.4. BC5. 128-133. Four small agailba were worn by four women dancers.</p> <p>4.3. BC1. 235. C44. Ten small agailba were present in the tool kit at C44.</p> <p>5.1. DS61. 155. Four large emu feather agailba were used to "make the rains come".</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Table 3.19. Relevant parts of all eleven scenes in which agailba appeared.

In the eleven scene-fragments listed in Table 3.19, four featured large emu feather agailba, six featured small ones made from feathers of various small birds, and one featured both large and small agailba. I saw four women deal with agailba in one scene and 22 men deal with agailba in multiple scenes: 14 of them in one scene each, 5 in two scenes each, 2 in three scenes each, and 1 in four scenes, for a total of 34 encounters. In age class 5, seven men had ten encounters with

agailba; in age class 4, six men had eleven; and in age class 3, six men had eight encounters. I failed to detect special genealogical or kinship relations among the people who used the agailba.

The realm of the agailba seems to be a likely place to find interesting patterns, but my failure to find them is not a problem. Unsupervised pattern detection does not promise to find patterns where none exist, nor to force data into patterns that do not exist.

4. Discussion.

Part 1 recapitulated alloparenting as described in Denham (2015), Part 2 provided moment-by-moment multidimensional descriptions of circumcision-related events re-enacted from the Dreamtime, and Part 3 provided in-depth analyses of invisible relational patterns that underlie Dreamtime events throughout Alyawarra society. All of these components built directly on my earlier papers cited in fn1.

The narrative summary in Part 2 was an experiment in field research methods using a reductionist approach to observe and describe what happened concerning the circumcision of 056♂DJ. It was an edited transcript of observational notes, photographs, diagrams, maps, etc. I wrote the narrative summary as a theatrical play spanning 5 acts and 35 scenes in 24,200 words. It conveys detailed images of a vibrant Alyawarra society almost all of whose members were actively engaged with the complexity of the Dreamtime and its associated multimedia and relational systems.

The tabular summary in Part 3 was an experiment in unsupervised pattern detection used to interpret the observational data from perspectives provided by demographic, genealogical, kinship and other sets of attributes. I wrote the tabular summary as a series of hypothetical university-level courses that each young Alyawarra man would complete between his circumcision at about 14 years of age and his marriage at about 28 years. These hypothetical courses cover many of the relational topics that a person must understand in order to function effectively within Alyawarra society. They do not cover the enormous range of multimedia content and techniques through which the Alyawarra metaphorically replicated the events of the Dreamtime, a project that would have required an observer with artistic and linguistic skills that were totally different from mine.

Sexual behavior yielded biological reproduction, while intensive memory training yielded comparable cultural replication. The memory training was supported by highly redundant multimedia tools including the aljera, all of the artistic devices associated with them, the language structure, the genealogies, the universally applicable classificatory egocentric and sociocentric kinship systems, the tripartite descent moiety structure incorporating labeled

patrilineal and unlabeled matrilineal descent in Countries that were anchored firmly to the land, and so on. It was a highly redundant data storage and retrieval system that perhaps had no peer elsewhere.

Substantive issues.

Communal mentoring, the childcare component. Alloparenting and communal mentoring are analogous concepts with different connotations. Alloparenting is defined as the care of children, generally below the age of 14 years, in which parents and their children benefit from help provided by a child's older siblings, parent's siblings, cousins, grandparents and more distantly related and unrelated others (Hamilton 1964, Wilson 1975, Hrdy 2011). The origin of the technical term is attributed to Wilson (1975), but its spirit is captured well by the proverb (probably African) that says, "It takes a village to raise a child" (Goldberg 2016), and by Kropotkin's (1902) theoretical arguments concerning mutual aid and cooperation.

In an earlier paper (Denham 2015), I dealt with alloparental care of Alyawarra boys and girls between birth and about 13 years of age, focusing on carrying, mainly by women and older children, of infants and children between 0 and 8 years old. In this article I examine the analogous delivery of care that I call communal mentoring provided by Alyawarra men to males between 14 and 27 years old. The core idea of distributed child care pertained equally to younger and older age groups, but alloparenting connotes children from 0 to 13 years old while communal mentoring as I use the expression here applies to males 14 to 27 years old.

Although alloparenting often refers to assistance in carrying, feeding, and similar activities that enhance a small child's biological welfare, the concept logically subsumes assistance that children and their parents receive from others in educational domains such as language learning and a full range of human social and intellectual activities. I paid special attention to this extended educational sense of communal mentoring as I discussed coming of age among Alyawarra males.

Cultural replication of this sort, which serves as the foundation for Stanner's "abidingness", can be interpreted theoretically in various ways including, but not limited to, Hamilton's (1964) theory of kin selection, Trivers' (1971) theory of reciprocal altruism, Wilson and Hölldobler's (2005) reconsideration of group selection and the origins of eusociality, Wilson and Wilson's (2008) theory of multilevel selection (MLS), von Neumann's (1956) theory of fault tolerant computing (Carter 1973), and similar formulations. I touch briefly on some of these theoretical approaches below but make no effort to apply them systematically. I focus on observing and describing rather than on explaining.

Traditionally, theoretical research in Western academic disciplines such as cognitive psychology and cognitive anthropology took individual people as the units of analysis and often was satisfied to stop at that point. No doubt an individualist approach was necessary as a starting point in Australian Aboriginal societies as well, but it was not sufficient. Rather, the emerging discipline of distributed or collective cognition (Stapledon 1937: Chapter VII.2; Hutchins 1995, Clark and Chalmers 1998; Michaelian and Sutton 2013; Feinerman and Korman 2017) that deals with memory and other cognitive processes performed collectively by members of social groups, may offer a useful approach to understanding the replication of Dreamtime events - if enough of the tradition is left for anyone to study it.

Dreamings, the historical component. In recent decades, major fragments of Aboriginal history spanning perhaps 65,000 years have accumulated in fields such as genetics (Tobler et al. 2017, Clarkson et al. 2017), archaeology (Smith 1989, Westaway et al. 2017), historical linguistics (McConvell and Alpher 2002), and social anthropology (Nunn and Reid 2016). It is beginning to appear that Aboriginal people, sometimes described by Europeans as “people without history”, may have the longest continuous historical record that can be assembled from unwritten fragments for any living human societies. Likewise I argue that their persistence, endurance, homeostasis, abidingness, were not signs of cultural stagnation but demonstrated remarkable intellectual development, stability and persistence under harsh conditions that could not support greater technological development. I suggest that Alyawarra culture was based on superior intellectual software, not on inferior technical hardware.

One of the most conspicuous elements in the deep history of the Alyawarra and in their daily lives at mid-20th century was the remarkable intellectual structure known as the Dreamtime, populated by primordial ancestors called Dreamings, who have been described in detail by many earlier writers (Spencer and Gillen 1899, Strehlow 1947, Moyle 1986, etc.). Although the Dreamtime by diverse names is a common element in many Aboriginal societies, my comments here pertain primarily to my limited understanding of it among the Alyawarra.

Dreamings and Countries were intimately related. In the early days – at an unknown ancient time - Dreamings such as ancestral kangaroo, emu, grub, albaidya bird, and ardwargia orange jumped up out of the land at specific named locations or sites throughout Australia. Each Dreaming site was located within a resource area called a Country, to which was attached a patrilineal descent line or clan of the same name, which was responsible for maintaining and sharing the land and its resources. After jumping up, many of the Dreamings travelled extensively, pausing now and then at sites or Countries where other Dreamings had jumped up, and generating Dreaming tracks that formed multiple interconnected networks across the continent. At the end of their travels, these ancestors sank back down into the sand, leaving shaped stone or wooden aljera (or *ANGERDELUNGWA*) as physical remains of themselves.

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Figures 4.1 and 4.2 are connect-the-dots maps of Dreaming sites and affiliated Dreaming tracks. Figure 4.1 (Spencer and Gillen 1899) shows long range tracks of D02 jaba oodneringaida and D08 emu Dreamings that occupy about 50,000 mi² or 130,000 km² of Aranda territory centered on Alice Springs and interconnecting with Alyawarra territory to the northeast. Figure 4.2 (Moyle 1986) is the first of 13 highly detailed overlays of Dreaming tracks in Alyawarra Country C38 encompassing an area of about 3000 mi² or 7800 km². Both depict Dreaming tracks that intersect and extend through the territories of multiple language groups and Countries.

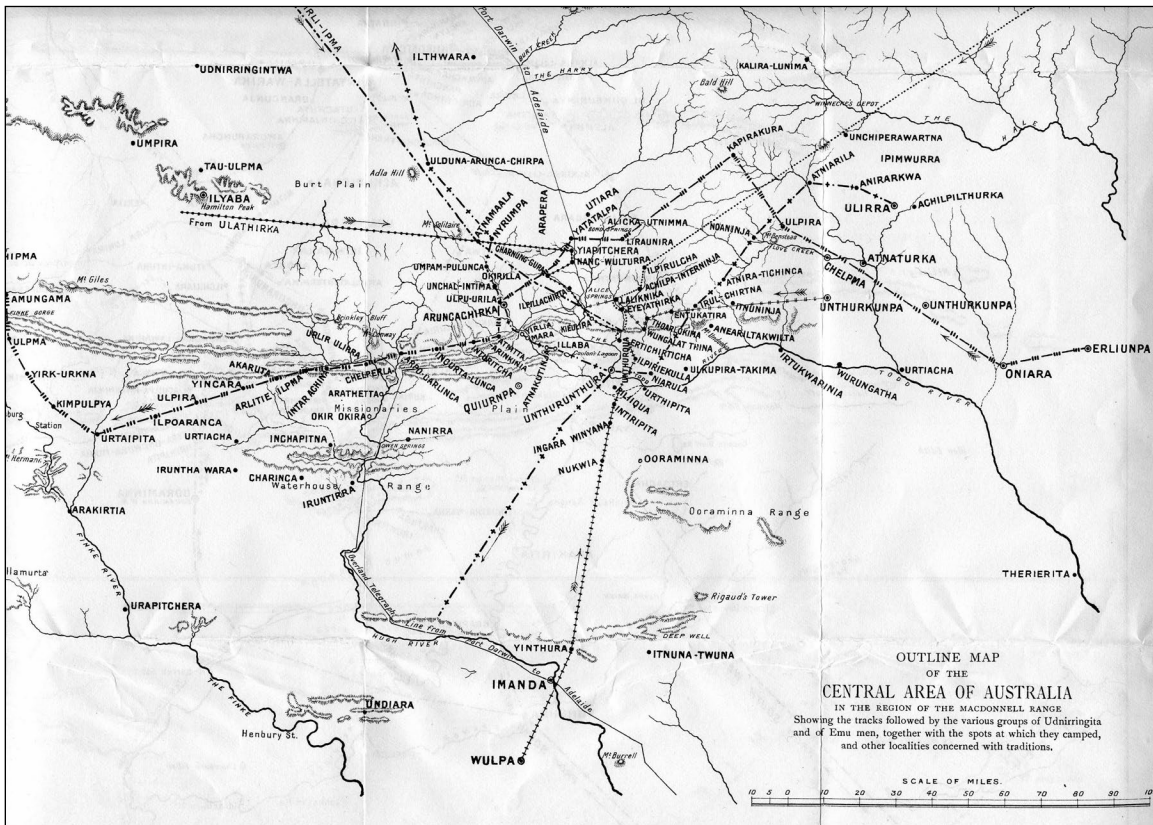


Figure 4.1. One of Spencer and Gillen's (1899: end paper) Dreaming track maps of Aranda territory.

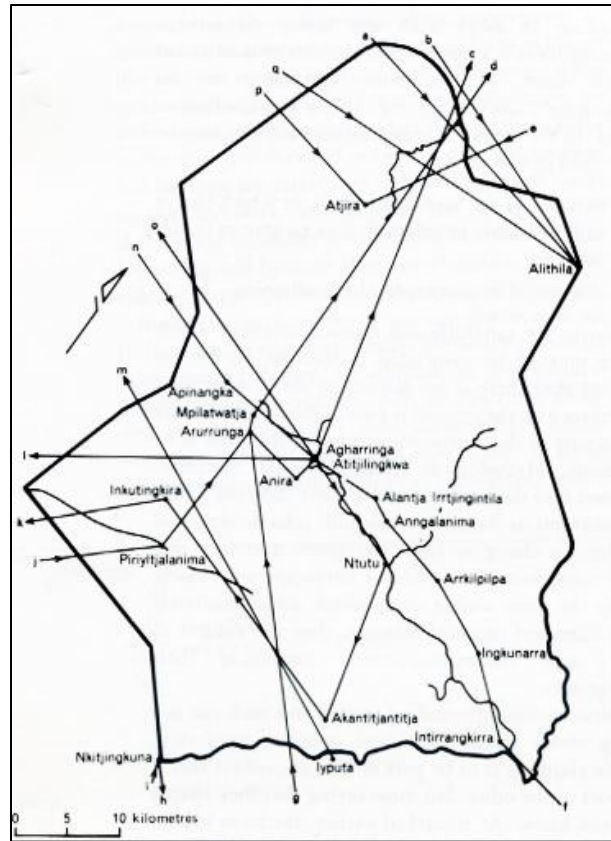


Figure 4.2. The first of Moyle’s thirteen Dreaming track overlays of Alyawarra Country **C38**.
“Routes of Dreaming lines inside [**C38**] traveling to or from non-Alyawarra territories” (Moyle 1986:42).

In the worldview of the Dreamtime, geography consisted of topographic features, named conceptual sites where Dreamings jumped up and went down, physical Countries surrounding those sites, resources within the Countries, tracks connecting sites, and networks formed by the sites and tracks; history consisted of activities at the sites and in the Countries, plus travels along the tracks. An intense relationship existed among ancestral kangaroo Dreamings, biological kangaroos “on the ground” in Central Australia, and a virtually endless series of kangaroo people who insured their survival in perpetuity. These relations suggest a coevolutionary symbiosis among Dreamings, flesh-and-blood kangaroos, and kangaroo people who maintained the abidingness of the universe as a whole. Thus the worldview embedded in the Dreamtime bears some similarity to Lovelock’s (1979) Gaia hypothesis that Flannery (2005:13-18) endorsed, and some of its complexities are illustrated in part by these Dreaming maps.

The frequency with which kangaroo and witchetty grub Dreamings appeared in *MHaM* presumably said important things about the life of 056♂DJ that elude confident interpretation by anyone who conducts observational research. Disentangling the history, geography and complex

networks of social networks that were intimately interwoven among Dreamings and Countries was a major problem that I did not even attempt to solve. Table 3.7 lists 12 Countries and Table 3.5 lists 28 (or 35) Dreamings associated with them as direct participants in *MHaM*. Each of the other seven circumcisions presumably had similar lists of associated Dreaming and Country relationships. What I once imagined to be a relatively simple many-one relationship between people and Dreamings has become a many-many relationship among what seems like well-ordered swarms of people, Countries and Dreamings that make 19th century notions of totems seem quaint.

Make him a man, the educational component. “We take care of them” (Denham 2015:19) or “we look after them” (Green 1998:2) was a mantra-like expression that summarized relations within Alyawarra society and between the people and their natural resources. Within a pervasive ethic of mutual aid (Kropotkin 1902, Hiatt 1996), everyone was responsible for taking care of everyone else, with divisions of labor based on sex, age and a multitude of kin and other relations.

People were responsible for learning their own geography, history and relational systems, partly to use them on a daily basis, partly to replicate them in perpetuity. The key concept here was not learning or enculturation that was subject to imprecision and reinterpretation. Rather it was replication²⁶ - specifically replication of concepts across space and time - with emphasis on the precise inculcation of Dreamtime concepts, insuring the abidingness of the universe in the form in which the Dreamings left it in the early days. Illustrating the educational component in operation is a principal issue addressed here.

Below 14 years of age, girls and boys usually lived together in an anoardegan, a single family residence, with their parents and young siblings, but they spent much of their childhood with women and other children at an alugera, a residence for single women and a meeting place for all women in a matrilineal subcommunity. During those childhood years, children informally learned a great deal about the Dreamtime and their own Dreamings by being totally immersed in linguistic, musical, and artistic idioms of the Dreamtime.

In the context of alloparenting, children grew up learning and speaking a language encompassing multiple relationship systems that were embedded in the Dreamtime. In contrast with standard Modern English that has eight personal pronouns and five cases, Green (1992:314-317 Table 1. Alyawarr Pronouns, for the Alyawarra language) and Scheffler (1978:462-469 for non-Alyawarra languages) demonstrate the extreme complexity and precise targeting of Australian

²⁶ “Replication” has numerous definitions and connotations. I follow the usage by Freeman Dyson (1985:8-9) and George Dyson (1997:29): “The difference between replication (producing an exact copy) and reproduction (producing a similar copy) is the basis of broad generalizations: genes replicate but organisms reproduce.”

Aboriginal pronominal systems, sometimes with thirty or more distinct personal pronouns coded for membership in diverse groups all learned concurrently by an unknown early age. The groups in question minimally included moieties, sections, sex-age categories, group sizes, address, reference, genetic kinship based securely on biological relationships and classificatory or non-genetic kinship based less securely on Dreaming and Country memberships.

Despite the load of relational rules and vocabulary inculcated continuously throughout those early years, often by a large number of alloparents and all of it expressed in terms of the Dreamings, children did not receive explicit training in esoteric features of the Dreamtime that was reserved for circumcised males. Yet one of my best sources of data on genealogical and kinship relations, based directly on the Dreamings, was a 12 year old girl who would have done well at MIT, Berkeley or Princeton, but instead became a major artist in the Eastern Desert Tradition.

Girls at about 14 years of age usually moved out of their parents' anoardegan and became full-time temporary residents of an alugera, then married and began to live with their husbands in their own anoardegans. But young women generally continued to spend most of their time at their alugeran with women who took care of them during their first 13 years of life, and who continued to function as alloparents for them as they gave birth to children of their own. The educational alloparenting that young women received from older women was a continuation of what they received in childhood.

At about the same age boys were circumcised. They moved out of their parents' anoardegans and began to live in an ngundy, an unmarried men's residence, with other single men where they remained on average for approximately 14 more years. The communal mentoring that young men received from older men was fundamentally different in content from their earlier experiences with women and other children.

Virtually all boys participated in a two-part transition or transformation required to make them into men. In the first part, men actively supported by women conducted an intensely musical week-long event during which they "sang" one or more boys to and through the circumcisions that suddenly, dramatically terminated their childhoods. In the second part which began immediately after the circumcision, the boys' fathers and virtually all of the other circumcised males in the community spent about 14 years in intensively training the recently circumcised males in language, oral traditions, music, dance, painting and the construction of decorated objects whereby they made each of them into a man.

A girl became a woman primarily by beginning to menstruate; a boy became a man by mastering the knowledge and skills concerning the Dreamings that were required of him and were

intensively taught to him by older men; i.e., “man” was defined socially and intellectually more than biologically. Circumcision made him eligible to become a man, but in itself it did not make him a man. Rather, with 14 more years of intensive training during which he demonstrated acceptable mastery of the required knowledge and skills analogous to “passing a test” (Banks 2015) at about 27 years of age, a young man was reclassified as a mature man who was eligible to marry, sire children, and participate as a fully responsible adult in the life of the community. The man’s lifelong learning about the Dreamings continued, but he transitioned from being a student to becoming a teacher. I close this paper at the point when young men were reclassified as mature men.

I cannot write a complementary dramatization entitled *Make Her a Woman* for my access to women’s lives was sharply restricted.

Methodological issues.

Redundancy, the complexity component. This paper implicitly addresses the problem of synthesizing reliable societies from unreliable people. Von Neumann’s (1951, 1956) classic papers concerning the synthesis of reliable organisms from unreliable components generated lengthy discussions of intrinsic reliability, redundancy, error detection and fault tolerance in computers and human brains, all of which are built of imperfect components. Table 3.13, showing a remarkably low error rate of about 3% in reciprocal kinship terms applications, suggests that von Neumann’s work may point to ways in which Aboriginal Australians achieved abidingness in their own societies.

For example, in support of their pronoun system, Alyawarra children learned a remarkably complex and highly redundant congeries of human relational systems that were embedded in the geography and history of the Dreamings and interlinked with each other. Minimally, they included the items in Table 4.1, all of which were based on the Dreamings, and each of which uniquely specified the precise “location” of each individual in a network of networks so that an error in any one of them (e.g., a “wrong” marriage) stood out as a conspicuous anomaly against the background provided by agreements among all the rest (unsupervised pattern detection).

In addition to the relational domain whose internal networking redundancy was extreme, there was concurrently a Dreamtime domain whose internal multimedia redundancy was essential to making a boy into a man. Minimally, it included the items in Table 4.2, all of which were based on the Dreamings, and each of which reinforced the others within the domain by restating the same or similar messages in different media.

- Society-wide biological, genealogical relations among virtually all individuals; i.e., virtually all were related to all through a multitude of biological and cognitive routes
- Patrilineal and matrilineal descent moieties comprised of descent lines (clans or Countries) derived from the Dreamings
- Simultaneous membership in patridescent, matridescent and marriage moieties
- Large systematic husband -wife age differences that generated marriage moieties in the form of helical ALTERNATING GENERATIONS (Rose 1960; Guhr 1963; Denham, McDaniel and Atkins 1979; Tjon Sie Fat 1990, Héran 1995, Denham 2012)
- Sororal polygyny in which men commonly married two or more biological full- or half-sisters or classificatory sisters
- Ecological corridors based on Dreaming tracks that facilitated transcontinental communications, trade and intersocietal marriages
- Community-wide organization of alloparental child care by women and men
- Ever changing group compositions of camps, residences and task groups, with special reference to the cast of characters in *MHaM*.
- Access to resources and mutual aid shaped by the Dreamings
- 30+ personal pronouns
- A 4-section sociocentric 'skin-term' system (primary terms of address: Kamara, Pitjara, Burla, Ngwariya) based on the intersection of descent moieties
- A 22-term dyadic egocentric kinship terminology (primary terms of reference) compatible with an Aranda-type 8-subsection system.
- Classificatory and universal extensions of both sociocentric and egocentric kin terminologies; CLASSIFICATORY KINSHIP encompassed lineal and collateral close biological kin, plus distant and remote biological kin, plus non-biological kin; UNIVERSAL KINSHIP meant that, at least in theory, all Aboriginal people regardless of language group affiliations were classified as kin
- A multi-term triadic egocentric kinship terminology, used for special purposes, that seems to have expanded upon the plural personal pronouns

Table 4.1. Redundant components of the relational domain.

- Painted and incised figures on cave walls
- Carved *aljera* and the ancient designs embedded in them
- Textual oral literature
- Unaccompanied vocal music of several genre performed by all (Moyle 1986)
- Dances of several genre (run, kneel, shuffle, prance, etc.) by women and men
- Carving of durable wooden shields and painting of ephemeral designs on them
- Body painting in 2- and 3-dimensions
- Making of 2- and 3-dimensional sand paintings
- Making of 3-dimensional *adnardunja* decorated objects and ancillary materials
- Making of 3-dimensional *waninga* weavings with human hair string
- Multimedia training sessions at Business camps and dance grounds
- Multimedia training sessions at Dreaming sites
- Extended dramatic presentations and training sessions at increase events
- 5-day theatrical dramatizations of *MHaM* in the manner of Reggio's (1982) experimental film *Koyaanisqatsi* with a wide range of variations depending upon which Dreamings were the focus of attention

Table 4.2. Redundant components of the Dreamtime domain.

The fact that each of the redundant domains listed in Tables 4.1 and 4.2 effectively maintained its own internal integrity is important, but the fact that each of them effectively contributed to maintaining the integrity of the other is even more interesting. Artistic and dramatic activities of the Dreamings were expressed in terms of relational networks, and *vice versa*. In effect, the two domains were two views of the same entity, analytically separable but in practice interdigitated such that analyzing one without the other was counterproductive if not impossible.

From an evolutionary perspective, the presence of these two highly unlikely domains, relational and Dreamtime, within a single society raises questions concerning origins. Is it more plausible to speculate that these two domains emerged more-or-less concurrently within a single hunter-gatherer society, or that the two domains emerged independently in separate societies then merged symbiotically? At a somewhat lower level of abstraction, a similar question presents itself with regard to the single or dual emergence of sociocentric and egocentric kinship systems in many Australian Aboriginal societies (McConvell 1985, 2013; Denham 2013; Allen 2007). In different biological domains, F. Dyson (1985:8-9) has speculated that replication and metabolism emerged independently in separate forms of life on Earth then merged symbiotically, and Margulis (1967) has demonstrated that symbiotic relations among PROKARYOTIC cells underlay the emergence of EUKARYOTIC cells. Unfortunately, these fascinating questions concerning the

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emergence of complexity in Australian Aboriginal societies lie far beyond the scope of this paper.

Unintended biases, the verbal component. Most of the linguistic issues with which I deal have little to do with Aboriginal languages. Rather they concern the colloquial and professional languages of colonial observers, myself included. They are subsumed broadly under Hanson's (1958:19) observation that "seeing is a theory-laden undertaking", which superseded an ancient assumption that seeing was theory-neutral.

Theories, formal and informal, alternately advance and retard the pace of scientific understanding by shaping what we observe and how we observe it. Earlier research in Aboriginal Australia that directly contributed to my work in the 1970s was touched only lightly or not at all by important concurrent theoretical developments in other disciplines. In particular, the methodology and philosophy of behaviorist psychology (Watson 1913, Skinner 1974), analytic philosophy (Russell 1918, Wittgenstein 1922), the Vienna Circle and logical positivism (Ayer 1959) had little impact on mid-20th century anthropology (Harris 1968, Voget 1975). In ethnography and ethnology, preferences for deductive explanations and mechanical models (Hempel 2002) retarded the development of probabilistic explanations and statistical models. Following the emergence of quantum mechanics, certainties of the Victorian age gave way to profound uncertainties (Baggott 2011). The changes suggested here were slow to reach Aboriginal Australia (Rose 1960).

Folk constructs (Foucault 1988) or colloquialisms whose meanings were taken for granted in Western societies, including "kinship", "marriage", "sex", "generation", "gender", "education", "religion", "ritual", "boy/girl", "man/woman", "child/adult" were used generally in accordance with diverse Western religious, political, economic, scholarly and ethical beliefs, and were distorted further by differences in ethnic and linguistic backgrounds of the alien observers.

Ethnocentric stereotypes, condemned by some long ago but still advocated by others today, labeled Aboriginal people and societies as primitive, subhuman or nonhuman, and produced descriptions that were biased accordingly. In a special issue on Australia published in December 1916, no less a worldwide authority than *National Geographic Magazine* and its author Herbert E. Gregory (2016), a Yale University geologist and geographer, captioned a photograph of two South Australian Aboriginal people as: "These savages rank lowest in intelligence of all human beings." In a special issue of apology for the magazine's long history of racism, Susan Goldberg (April 2018), NGS Editor in Chief, noted that "To rise above the racism of the past, we must acknowledge it" - even if we wait a century to do it.

Racism may have declined slightly among white Australians across a century of historical accounts of Aboriginal circumcisions in Central Australia²⁷. By 1971, it was only barely detectable at MacDonald Downs Station and in post-WWII ethnographies, but elsewhere it remained ubiquitous and debilitating to the Alyawarra and to me. Sexism was equally problematic as Bell (1983:229ff) reported from her work with the Alyawarra at Warrabri Settlement and from her reading of the cross-cultural literature on Aboriginal women²⁸. But ideological prejudices remained far more pernicious for they were deeply embedded in the languages and institutions of white Australians and were supported by universalizing religions whose representatives advocated the control of human behavior in order to assimilate or extinguish competing ideologies.

Reasoning with analogies was a key ingredient in formulating the Dreamtime and it remains essential for formulating and conducting scientific research (Hofstadter and Sander 2013). But the risks associated with false analogies or out-of-date analogies sometimes make using them counterproductive. Thus it is important to correct mistakes or update analogies made by early Western observers who jumped to unsound conclusions about Aboriginal traditions and activities based on superficial but misleading resemblances to those of the West. Specifically it was counterproductive to equate the Dreamtime with “primitive religion” since it had more in common with knowledge-based philosophies of Plato, Confucius and modern Science, was expressed in the alien idiom of replication, and eschewed alternative idioms such as worship and meditation. I hope that my omission of “initiation, rite, ritual, ceremony” and other theoretically-laden religious terms will improve our understanding of Australian Aboriginal societies.

I am not opposed to analogies, but I do suggest that other 21st century analogies may be more fecund. Specifically, traditional Aboriginal requirements for advanced training in the Dreamings closely resembled Western university-level educational requirements for advanced training in the sciences. I suggest that this is an excellent analogy, but it sounds ridiculous to those who continue to believe that Aboriginal Australians are subhuman, which by analogy is a demon that should have been exorcised long ago.

How could attempts to formulate a science of human behavior in the face of these distorted descriptions do anything but fail?

²⁷ These accounts of Aboriginal circumcision, plus my own account in this paper, take mutually complementary approaches to the events described here. I hope that my approach makes a significant contribution to the large body of data that spans a century. Earlier works include: Spencer and Gillen (Aranda 1899) and Strehlow (Aranda 1947); Rose (Groote Eylandt 1960); biography of Rose (Monteath and Munt 2015); Meggitt (Walbri 1962); Bell (Alyawarra 1983) and Moyle (Alyawarra 1986) both of whom worked with members of my 1971 research population.

²⁸ Warner (Murngin 1937); Kaberry (Kimberly region 1939), Goodale (Melville Island 1971)] plus more recent work by Hiatt (1996) and Musharbash (Papunya 2003/8)

Reductionism, the methodological component. Holism and reductionism are complementary worldviews, each with its own merits, and I respect both of them. But I suggest that in Aboriginal Australia, holistic methods that were aimed at understanding the meaning of human events without first or simultaneously using reductionist methods to understand precisely which individuals, activities, relationships, places, times, etc. constituted the parameters of those events generated an especially serious assortment of biases. Those methods entailed trying to read “the hearts and minds” (Porch 1986:394) of people who lived in extraordinarily difficult settings and used radically different languages and utterly alien discourse styles to describe intellectual constructions of the universe that were inconceivable to Westerners. It was an impossible task that failed, and one that I address here with much trepidation.

In conducting my research and writing this article, I have attempted to deal with the exceptional social relations manifested among the Alyawarra, and the conceptual biases manifested among Western observers, by using reductionist statistical methods rather than by relying on holistic expert judgments. In a review of Kahneman (2011), F. Dyson (2015:222) noted, as if it were a self-evident truth, that “Statistics and simple arithmetic tell us more about ourselves than expert intuition”.

Yet F. Dyson (1997:14) also noted that the discussion of human affairs requires insight and imagination. For guidance in those matters, he turns not to sociology and statistics but to case studies and science fiction that “provide more insight into past and future worlds than any statistical analysis.”

Consider Kubrick and Clarke’s (1968) *2001, A Space Odyssey*. F. Dyson (1979:190) argued that Kubrick’s message was: “if ever we confront an alien [extraterrestrial] civilization, we will discover that the aliens are ... so alien that almost nothing they do can be comprehended by us in logical terms.” This hypothetical situation is equivalent to claims by colonizers that indigenous Australians were subhumans or nonhumans, although they might equally well have been incomprehensible superhumans. “In its strange, slow way, *2001* ... show[s] mankind dwarfed and humbled in the presence of something that is, in Haldane’s [1927:286] famous words, ‘not only queerer than we suppose, but queerer than we *can* suppose.’” One of the anonymous readers of this paper summarized the situation well: “The mutual strangeness and incomprehensibility inherent in European-Aboriginal encounters probably yielded the most mutually divergent contacts [between cultures] that have ever occurred on this planet.” To deal with this enigma, Wilson (1998:59) argued that “reductionism is the primary and essential activity of science. ... Practicing scientists, whose business is to make verifiable discoveries, view reductionism [as] the search strategy employed to find points of entry into otherwise impenetrably complex systems” such as alien civilizations.

In this paper, I have attempted to deal - implicitly and explicitly - with all of the issues raised here. I too rely on statistics and simple arithmetic, avoiding vague generalities and expert opinions, and always remembering that the devil is in the details. I have presented a vast array of details and a great many examples in hopes that their richness will convince you that reductionist methods can pull you into the life of an alien society more effectively than hand-waving and oracular pronouncements. Also I rely on science fiction as a bridge between Snow's (1959) "two cultures", the sciences and the humanities²⁹, and as a contribution toward CONSILIENCE or the unity of knowledge³⁰ as defined variously by Whewell (1840), Wilson (1998) and Gould (2011).

The issues addressed above easily become entangled with disputes in epistemology, relativism, ways of knowing, philosophy of science, and so on. I consider those entanglements to be important and fascinating, but this paper is not the place to deal with them at greater length.³¹

Limitations, the personal component. As I approached the issues raised here, my own limitations verged on being disabilities.

Linguistic limitations. I suspect that the long history of attempts to translate Aboriginal oral traditions into English or other European languages by people who were not completely fluent in the language, discourse style and cognitive systems of their informants has generated some of the largest unintended biases associated with Australian Aboriginal studies. I was not arrogant or ignorant enough to believe that I could become fluent in the Alyawarra language in the time available to me, use it to probe successfully into the meanings of things that were far beyond my comprehension, and still achieve my other objectives with regard to nonverbal behavior. Therefore, I made do with a strong command of specialized vocabulary sets and minimal command of Alyawarra grammar and syntax; I never attempted to record or translate texts of the Alyawarra activities described here. Many activities photographed in Central Australia and published by Spencer and Gillen (1899, etc.), as well as the kinship terminology and related behaviors that they published, are strikingly similar to what I observed among the Alyawarra about 75 years later. Likewise, I believe but am not certain that the narratives spoken and sung by the Alyawarra were tolerably close to materials published long ago by Spencer and Gillen (1899), Strehlow (1947), Elkin (1954) and others. I did not try to duplicate those early works.

²⁹ Berlin 1953, Snow 1959, Clarke 1966, Wilson 1998, Gould 2011.

³⁰ Kurtén (1978/1980) on hypothetical interactions between Neandertal and Cro-Magnon; Stapledon (1937) on future histories of extraterrestrial civilizations; Asimov (1950-1993) on mathematical sociology, psychohistory and artificial intelligence in his *Robot* (1950-85) and *Foundation* (1951-93) novels; Krugman (2012) on Asimov's Hari Seldon and *Encyclopedia Galactica*; Kubrick and Clarke (1968) on the monolith and the Starchild; Wilson (2010:175-247) on eusociality in *Anthill*, Part IV, *The Anthill Chronicles*.

³¹ See the *Stanford Encyclopedia of Philosophy* (1995-2018) for extended discussions of these and related topics.

Some have accused me of trying to make an asset out of a liability, but I disagree. My decision to minimize verbal issues and maximize nonverbal issues enabled me to see Alyawarra society from a previously unexplored perspective, and do it far better than I could have done it while struggling to achieve fluency in their language. But fluency in my own English language is equally important. I have attempted throughout the paper to write in ordinary, nontechnical English, sometimes known as Plain English.

Artistic limitations. Conceptually, this paper focuses primarily on redundant components of the relational domain, but in fact most of the activities that I described lie within the huge Western cognitive domain of “the arts”. Yet I am by no means an expert in literary criticism, vocal or instrumental music, dance, painting or any of the other arts. For better or worse, my observations and descriptions reflected my naïve exposure to Western artistic forms but no formal exposure to any other artistic traditions.

I accidentally found myself at a time and place where extraordinary artistic events were occurring and did my best to record them despite the holes in my education and my total lack of skills and equipment required to make an ethnographic documentary. In a manner of speaking, I independently and unknowingly stumbled upon the documentary genre now known as “direct cinema” that originated between 1958 and 1962 in North America and was developed by Jean Rouch, the French filmmaker and anthropologist³². But I did it with two small cameras, a 35mm SLR and a Polaroid, plus a hand-held voice tape recorder and a portable typewriter. Surprisingly the minimal and unobtrusive technology worked. Perhaps you will agree that my decision to accept the challenge was the proper course of action, but you may not.

My comments on Alyawarra musical genre, styles, long song lines, short song verses, kneeling dance performances lasting about 4 minutes each, etc., have benefitted greatly from Moyle’s (1986) *Alyawarra Music*. Dutton’s (2009:226-229) widely acclaimed and valuable cross-cultural analysis of “the arts as a whole” implies that an emphasis on replicating events from the Dreamtime rather than creating something new under the sun means, by definition, that the Alyawarra were craftsmen rather than artists. Since connotations sometimes carry more weight than definitions, I suggest that Dutton’s position sounds ethnocentric.

Mathematical limitations. The research described above lies near the lower boundary of what in the 21st century has come to be called Big Data. In Table 1.1 near the beginning of this paper, the expanded census population of 1461 people established the total length of the primary data file spanning the period 1817-1979. It included 377 people who were members of my field research population in 1970-71 and 1084 who were known to me later only through their census records.

³² Jean Rouch. From *Wikipedia*. Retrieved 23 July 2018.

The width of the master file was problematic. Each record contained 21 fields allocated to basic demographic, sociological and genealogical data; large blocks of cells allocated to kinship term applications, censuses, group compositions, residential mobility, infant carrying and behavioral observations in *MHaM*; plus a free-standing block of 41,000 behavioral observation records with ten fields each; and so on. Within that framework, counting approximately 600,000 alphanumeric data points was not difficult, but assigning countable values to other kinds of linked and integrated data (diagrams, maps, contents of photographs, audio recordings, genealogies, field journal notes, etc.) remains a work in progress.

One of the anonymous reviewers of this paper suggested that we can view each Alyawarra individual as a cell in the very high-dimensional database described above, and all of Alyawarra life as massively parallel code, evolved, distributed and maintained not unlike DNA, by way of analogy. Although I designed the database and collected the data, I lack the skills and the technology required to explore the images and analogies suggested by the reviewer. Perhaps other readers can do what I cannot.

Summary. Facts about Aboriginal societies often were unintentionally biased from the moment they were recorded. Descriptions that optimally would have been unbiased often reflected diverse cognitive and theoretical biases (Meehl 1954), recently called illusions of validity (Kahneman 2011, Dyson 2015:221-23) that can be defined briefly as false beliefs, generally based on ignorance rather than knowledge, that we intuitively accept as being true. Local illusions were magnified by the global racist Christian illusion of EXCEPTIONALISM commonly attributed to species membership and skin color, often leading to deliberate as well as accidental misrepresentations of Aboriginal affairs.

I re-conceptualized the topic of the research reported here. Instead of studying a society in thrall to a static “primitive religion”, I studied an educational process that used replication, alloparenting and communal mentoring to shape a dynamic knowledge-based society –abiding, anarchistic and utopian (Hiatt 1996, LeGuin 1974; Davis and Stillman 2005) - that was utterly incomprehensible to European colonizers.

Instead of using a holistic methodology to search for broad meanings of concepts that almost certainly lay beyond my grasp, I used a much more tractable reductionist methodology to capture minutiae of social behavior in an alien society. Others must judge whether my methods provide a viable alternative to traditional ethnographic methods.

I captured the artistry of a week-long Alyawarra circumcision event as a continuous sequence of great complexity and beauty, not as isolated snapshots of ritual paraphernalia.

I made every effort to avoid unintended linguistic and theoretical biases associated with traditional ethnographic research in Aboriginal Australia, and intended biases associated with racial and religious bigotry.

Because I know that I am not good at learning foreign languages, I avoided spending a great deal of time on that task, instead focusing almost all of my efforts on doing things that I could do well, such as observing and recording data for numerical and computer assisted analysis.

I suggest that the highly flexible - sometimes ad hoc - participation by Alyawarra in events associated with circumcisions, as well as their successful navigation through the personal pronouns and a multitude of relational dimensions, assumes that all adults knew a nearly-complete range of applicable behaviors based on gender, age categories, moiety-section-subsection memberships, genealogies, Country and Dreaming memberships, and so on.

Due to the W<H age bias, the Dravidianate / Kariera / Aranda kinship pattern as practiced by the Alyawarra showed no statistical evidence of any bilateral sibling exchange marriage, which for more than a century has been cited as a *sine qua non* of that kinship pattern. In the context of the 14-year W<H age bias, it is impossible to maintain a systematic pattern of that sort anywhere in Aboriginal Australia. A common approach to kinship analysis as a linguistic phenomenon remains popular because of its simple elegance and purity, and its receptivity to logical and mathematical manipulation, despite its exclusion of inconvenient truths concerning demographic and statistical aspects of kinship term usage.

It is plausible to consider explaining away my image of Alyawarra society on the basis of imputed but undocumented historical changes within the society between 1899 and 1971, but it is equally plausible to consider dismissing many earlier images based on preconceived notions of primitivity and other ethnocentric biases that shaped what earlier observers said they saw.

Probably there is very little that we can do about the sample of size one. I do not know of any past research from Central Australia that is comparable with the project described here, and I do not know present political conditions in the region well enough to speculate about conducting comparable research in the future. Perhaps someone knows a good place in which to replicate the project. Else we can wait until we encounter a friendly extraterrestrial civilization.

My argument was simple and basic. In any science in which observations and descriptions are defective, prediction and control are doomed from the outset. My objective was to develop better ways to observe and describe life in an Australian Aboriginal society, in hopes that the changes would lead to improvements in theories related to the prediction or retrodiction of human social

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behavior. Some of my interpretations may be questionable, but my observations and descriptions of coming of age among Alyawarra males in 1971-72 contain a lot of data that may be of value to others in the near or remote future.

Speculations.

I agree that competition in the manner of Malthus and Darwin probably was a necessary precondition for the emergence of alloparenting and communal mentoring in Aboriginal Australia. However, following Kropotkin, Hiatt, Hamilton, Trivers, Wilson, Hrdy and others cited below, I speculate that Darwin's tangled banks alone were insufficient to account for the emergence and persistence of the extreme forms of cooperation discussed here.

Following Hamilton, Wilson, Hölldobler and others but reaching further afield, I speculate that the widely distributed, kin-based, individualistic, continent-wide knowledge of the Dreamtime constituted a collective cognitive system analogous to those proposed in Stapledon's (1937) future history of our galaxy.

Following precedents set by Margulis, Dyson and others, I speculate that symbiosis, an extreme form of cooperation, played key roles in integrating artistic and relational domains within the Dreamtime, and sociocentric and egocentric modes of kinship within the relational domain.

Following arguments by von Neumann and others, I speculate that Aboriginal educational methods, including alloparenting and communal mentoring, yielded effective replication of events from the Dreamtime. That replication contributed to the synthesis of highly reliable societies from unreliable humans as manifested in the abidingness that characterized Stanner's (1965) view of Aboriginal societies and Gammage's (2011) view of *The Biggest Estate on Earth*.

Glossary.

Alyawarra terms

ABULA – “the road”; part of dance ground #4 where the circumcision occurred

ADNARDUNJA (Alyawarra), *NURTUNJA* (Aranda) - carefully shaped and heavily decorated objects, typically wooden poles, attached to the heads or bodies of dancers who wore them during musical presentations and teaching events

AGAILBA – A bundle of feathers of various sizes from various bird species that were worn in a prancing dance and were incorporated into *adnardunja*

AGIEWA - An *agiewa* was analogous to a “work shop” and was functionally “backstage”, while a business camp was analogous to a “classroom”, sometimes called “the office”, and was functionally “on stage”. They looked alike but functioned differently.

ALJERA (Aranda), *ANGERDELUNGWA* (Alyawarra) – Dreaming. When ancestors or Dreamings completed their travels and sank back down into the sand, they left behind these shaped stone or wooden objects as physical remains of themselves. Some are stationary at Dreaming sites, some are portable and move about when the people move.

ALUGERA - residence for single women and a meeting place for all women in a matrilineal subcommunity

ANGERDELUNGWA (Alyawarra), *ALJERA* (Aranda) – Dreaming / seed. When ancestors or Dreamings completed their travels and sank back down into the sand, they left behind these shaped stone or wooden objects as physical remains of themselves (see Moyle 1986:11, 32ff, 262 for *NGIRTILINGKWA*).

ANOARDEGAN - residence for a monogamous or polygynous single family

-ARINDYA – a combining form that denotes membership in a group: residence, Country, etc.; e.g., *alugera-arindya*: a person who lives in an *alugera*

COOLAMON - a bowl-like carrying device

GARBUDA - head or senior boss of one’s father’s father’s descent line

GARBUDA-IN-TRAINING – a man being taught the knowledge and skills required of a *garbuda*

GORNAIDJA - large bullroarer (see bullroarer)

GULLUH – finished; the end; dead

ILABERA-ILABERA –largest bullroarer (see bullroarer)

KEREDA - the hard, flattened spot where a termite mound sat in the past; used as a base for sand paintings, circumcisions, etc.

KURTUNGURLA - custodian or senior manager of one’s mother’s father’s descent line; contrast with *garbuda* (for details see Moyle 1986:34ff)

NGUNDYA - residence for single men

NGWARLA – sweet gum, flower, sugar, honey

UNGUNJAIYERA - small bullroarer (see bullroarer)

WALBIA – a young man who plays the role of a prisoner

WANINGA – an *adnardunja* in the shape of a wooden cross with a single twisted strand of human hair string spiraling inward from one corner to the center, connecting the four arms together in a continuous spiral.

WARDIDJA – dancing poles; a pair of upright poles used in women’s dances

WOOMERA – spear thrower

Sex-age categories; see Table 3.3

AWAYA – male child

AWAYA ALGELYA – younger male child

AWAYA ELGWA – older male child

ARDWA – adult male

ARDWA ANDIDJA – young man

ARDWA ELGWA – mature man

ARDWA AMBWA – senior man

ARDWA AYUA – elderly man

GWAYA –female child

GWAYA ALGELYA – younger female child

GWAYA ELGWA – older female child

ARELA – adult female

ARELAMBWA –senior or elderly woman

Dreamings; see Table 3.5

ABMALBENGA - lizard

ABUDA - rock

ADEDERA - parrot

ALBAIDYA - bird

ALJUARDA - seed

ANAIDYA - potato

ANGWENA - feathers

ARDWARGIYA - orange

ARENGA - dingo

AUHRA - kangaroo

ILAUWA NDANGA - seed

IYUNGWA - night

JABA - witchetty grub. A term used in Australia for the large, white, wood-eating larvae of several moths. The term is used mainly when the larvae are being considered as food. The grub is an important insect food of the desert and has historically been a staple in the diets of Aboriginal Australians (Wikipedia). Various types of jaba include oodneringaida, alinya, ngurbiya.

MAINYERU - seed

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MBWALENGA - frog
MWAIIDYA - water
NDANGA - seed
NDYALBINDYA - rainbird
NGWAIYANGA - seed
NGWARLA - sugarbag (ant)
NGWARLA YEREMBA - sugarbag (ant)
NUMUNGERA - orange
NYARLA - lizard
NYARLA ALUWAIIDYERA - lizard
ORABILBA - bird
PITURI - tobacco
YERENDENA - plum
? - emu
? - possum
? - man
? - rain
? - lightening

Sociocentric section names; see Figure 3.8

BURLA – section
KAMARA – section
NGWARIYA – section
PITYARA – section

Egocentric kinship terms; too complex to enter here; see Table 3.12.

English and Alyawarra-English terms.

My convention: upper-case usage (e.g., Country and Dreaming) differentiates Alyawarra-English from implicit lower-case Standard English usage (country and dreaming.)

ALLOPARENTING – nurturing of younger children in which care was provided by most or all members of certain sex, age and kinship categories rather than by parents alone

ALTERNATING GENERATIONS – Alternating even-odd generation levels within endogamous marriage moieties

BEEN FINISHED – the end; dead; gulluh

BULLROARER – a musical instrument; a simple wooden slat, thin and elongated, whirled in a circle above one's head on the end of a cord. The slat rotated about its axis in alternating directions under the influence of aerodynamic forces and twisting of the cord, thus producing a pulsating roar (Fletcher 2003). Volume and pitch (rate of pulsation) depended upon the size and shape of the object, the length of the cord, and the rate at

which it was whirled. Three sizes: ungunjaiyera small, gornaidja large, ilabera-ilabera very large.

BUSINESS CAMP – An agiewa was analogous to a “work shop” and was functionally “backstage”, while a business camp was analogous to a “classroom”, sometimes called “the office”, and was functionally “on stage”. They looked alike but functioned differently.

CIRCUMCISION - excision of foreskins of adolescent males, and life cycle events associated with it

CLASSIFICATORY KINSHIP – a kinship system that is based on close and remote genealogical relations plus non-biological kin relations (fictive kinship) through clan, section and moiety memberships

COMMUNAL MENTORING - of adolescent males in which care of the young was provided by most or all members of certain sex, age and kinship categories rather than by parents alone

CONSILIENCE – the unity of knowledge

COUNTRY – In a geographical sense, a Country was a resource area associated with a Dreaming site. In a sociological sense, a Country included male descendants of a Dreaming plus their daughters but not their daughters’ children who were members of their own fathers’ Countries. Countries in *MHaM* are listed in Table 3.7.

CUT HIM – the act of circumcising an adolescent boy

DATA POINT - an identifiable element in a data set

DREAMING - primeval ancestors rooted in the ancient Aboriginal Dreamtime; Dreamings in *MHaM* are listed in Table 3.5.

DREAMING SITE - physical locations (waterholes, etc.) of ancestral events where Dreamings “jumped up” or “been finished”

DREAMTIME – a) an ancient historical period: the “far distant past with which the earliest traditions ... deal” (Spencer and Gillen 1899), heretofore classified as “primitive religion”; b) also, the present day way of knowing or interpreting the mundane world in terms of the primeval ancestors.

EARLY DAYS – Dreamtime conceptualized as an ancient historical period.

EGOCENTRIC – centered on Ego, the speaker; “myself”, “my mother”, “my father”, etc.; contrast with sociocentric

EUKARYOTE – cell with a nucleus

EXCEPTIONALISM – an extreme form of ethnocentrism: “we are special / best / unique because we are ...” (white, black, Christian, human, etc.)

GENERATION INTERVALS – mean age difference between each parent and their children

GERONTOCRACY – “government by rule of old people”. A common belief that old men in Australian Aboriginal societies took young women away from young men, thereby forcing young men to remain celibate.

HELICAL GENERATIONS – asymmetrical generations resulting from significant mean $W < H$ age differences

HOLISM - characterized by comprehension of the parts of something as intimately interconnected and explicable only by reference to the whole; emphasis on emergence; “The whole is greater than the sum of the parts.”

INCREASE EVENT – activities typically entailing songs and dances that are performed to increase a local population or sustain a global population of living representatives of an ancestral Dreaming.

INSTANTANEOUS SCAN SAMPLING - a technique in which an observer records an individual's current activity at preselected moments in time; a sample of states, not events; used to study the percent of time spent in various activities; used to obtain data from a large number of group members, by observing each in turn. If the behaviors of all visible group (or subgroup) members are sampled within a very short time period the record approaches a simultaneous sample on all individuals. Such data are almost impossible to obtain by most other sampling techniques (paraphrased from Altmann 1974:258-59).

KINSHIP - in the broadest sense, the cognitive and biological networks that constituted multiple interlocking frameworks for social interactions

KIN TERMS – egocentric reference terms used in *MHaM* are listed in Table 3.12.

KOYAANISQATSI – film; Godfrey Reggio's (1982) visual and auditory tone poem that teaches world history *sans* dialogue and descriptive text.

MHAM (MAKE HIM A MAN) – multiyear transition from boyhood to manhood with long term emphasis on teaching

MOIETY – half; groups of people coalesced to form two more-or-less equivalent subgroups, optimally of about the same size, generally called sides or halves or moieties from the Anglo-French *moitié* meaning "a half" or "a part of something".

PLAY WITH HIM - unclear definition

POLYGYNY - a pattern of marriage in which a man has more than one wife

PROKARYOTE – cell without a nucleus

REDUCTIONISM - belief that complex phenomena can be explained by breaking them down into smaller component parts; an empiricist search strategy “employed to find points of entry into otherwise impenetrably complex systems” (Wilson 1975) such as alien civilizations.

REPLICATE / REPLICATION – The definition is to copy, duplicate or reproduce, but the connotation is much stronger; i.e., the output must be an exact copy of the input. Replication requires precision matching of the process and the product with zero tolerance for exceptions.

SECTION SYSTEM – named or unnamed intersections of patri-, matri- and marriage moieties

SEX-AGE CATEGORIES – 2 sexes by 5 age cohorts listed in Table 3.3 (see Alywarra terms above)

SING HIM – 5-day transition from boyhood to young manhood with short term emphasis on circumcision

SOCIOCENTRIC – centered on named categories such as sections (Kamara, Pityara, Burla, Ngwariya) based on the intersection of patri- and matri- descent lines (sometimes treated as similar to “family” names)

SORORAL POLYGYNY – men marrying two or more women who are full, half or classificatory sisters

SORTIE – “to go out and to come in”

SPINIFEX – a kind of tussock grass

SUBCOMMUNITY - A group of women – young, old, married, unmarried – who lived in or were closely affiliated with one alugera. They almost always constituted a tight genealogically based kinship network whose core members from youngest to oldest were: young children and their older sisters and parallel cousins; their mothers and mother’s sisters; mother’s mother; mother’s mother’s mother; and very rarely their MMMM, plus classificatory kin in some of those categories. Husbands of married women were *de facto* members of their wives’ subcommunities.

SUGARBAG – a species (genus?) of Australian ants that collects sugar/honey

UNIVERSAL KINSHIP – every person stands in a kin relationship with every other resident of the society, region or continent

UNSUPERVISED PATTERN DETECTION - In supervised pattern detection, the identities of special interests must be provided by an outside source, supervisor or theoretician; in unsupervised pattern detection, the computer must decide when it has found a pattern of special interest entirely on the basis of information in the database (Hand 2002:1-2).

WORK HIM UP – unclear definition

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