Group Compositions in Band Societies (GCBS) Database Manual

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Introduction

To understand any dataset, you must read:

- This Manual, which describes the features that characterize ALL of the datasets.
- The Key that accompanies each dataset and describes the unique features of that particular dataset.

The Problem

The size, composition and organization of physical and conceptual groups in hunter-gatherer societies are important to human paleontologists, prehistoric archaeologists, geneticists, demographers, structural and ecological anthropologists, and many others

both within and outside of anthropology. Although systematic demographic, genealogical, and coordinate relational data featuring individuals as the units of analysis have been published for many hunter-gatherer societies, they have appeared in a large variety of sources many of which are quite obscure, and in formats as diverse as government censuses, annotated household lists, diaries, narrative ethnographic descriptions, and genealogical diagrams. Furthermore, many that have been collected have never been published in any form, and remain unavailable to the scientific community at large.

Because of their inaccessibility and heterogeneity of form, it has been impossible for anyone to perform quantitative analyses of these kinds of data from a large sample of societies, either to arrive at empirically supported generalizations or to test hypotheses concerning hunter-gatherer demography and social organization. Hence, discussions of these topics remain limited in scope and tied securely to one or a few ethnographic examples, or broad in scope and virtually unattached to concrete comparative data. This publication seeks to reduce this problem.

The Group Compositions in Band Societies (GCBS) Database makes available many sets of hunter-gatherer genealogical censuses in standardized, general-purpose graphic and tabular formats. Some of the data has never been published before, but much of it has been extracted from 19th and 20th century publications. The tabular data should facilitate computer assisted analysis from a broad range of theoretical and substantive perspectives, encourage rapid and extensive data transformation for pursuing questions that presuppose different data structures and coding conventions, and enable users to re-attach the coded data to the sources from which they came so that the rich ethnographic contexts in which the data were embedded are not lost.

Preview of the Data

Table 1 Statistical Summary lists the societies represented in the GCBS Database and briefly summarizes some statistics about the collection as a whole.

Table 1 Statistical Summary

Key to Statistical Summary column headers:

- **Society Code.** The four character code that is used to identify each dataset, and each item in each dataset, throughout the GCBS Data Base.
- **Society Name.** The label attached to each Society Code, ordinarily including only the name of the society, but in some cases including additional information to distinguish among two or more datasets that pertain to the same society.
- **Date of Ethnographic Present.** Date to which the data pertain.
- **Number of Living People.** Number of numerical data records that pertain to people coded as "living" in the data sources. This number includes all known male and female members of the research population who were living and present, plus those who were known to be alive but were residing elsewhere, plus individual children of unspecified sex who were recorded as members of families within the research population. The physical location of each person at each census is coded in the numerical census data.
- **Total Number of Records.** Total number of numerical data records in each dataset pertains specifically to the size of the numerical data file. Indirectly, however, it enables you to compute the number of records in

the dataset that pertain to deceased ancestors: Total Number of Records minus Number of Living People equals number of numerical data records that pertain to people coded as "deceased" in the data sources.

- **Number of Households, Camps and Villages BY Censuses.** This figure is a ballpark estimate of the number of censused residential groups represented in each dataset. In the minimal case, if a dataset referred to only one camp at one time and contained no information on household compositions, the number in this column would be "1". On the other hand, if the set referred to two camps containing a total of nine households, and the report contained two censuses of those groups, the number in this column would be "22" (2 camps + 9 households = 11 residential groups; 2 censuses of 11 residential groups = 22 censused residential groups). Computing the precise number can be challenging, especially in highly fluid situations in which complex changes occur through time in the number of censused villages, camps, households and other residential groups.
- **Diachronic data.** Synchronic datasets pertain to single points in time, while diachronic datasets contain from 2 to 16 repeated censuses. In some cases the repeated counts are separated by periods of years, in other cases they occur every few months spanning a seasonal cycle, in other cases they occur as often as twice a month for several consecutive months. "Yes" in this column means that the dataset contains a diachronic sequence of some kind. Consult the dataset Key files to determine the precise nature of the sequences.

Society code	Society name	Date of ethno-graphic present	Number of living people	Total number of records	Number of households, camps, villages X censuses	Diachronic data?
Africa						
AF01	!Kung	1952	219	307	31	No
AF02	Mbuti Forest	1957	537	706	197	No
AF03	Mbuti Village	1957	224	303	1	No
	Africa subtotal		980	1316	229	
Asia						
AS01	Ainu	1880-85	127	216	84	No
AS02	Chenchu	1940	467	636	135	Yes
AS03	Semang	1924,50	61	83	30	Yes
AS04	Vedda	1905	26	48	2	No
	Asia subtotal		681	983	251	
Australia						
AU01	Alyawarra	1971	264	377	928	Yes
AU02	Gundangborn	1948	15	35	1	No
AU03	Miwuyt	1967	68	90	23	No
AU04	Ngatajara	1966	13	19	1	No
AU05	Wanindiljaugwa	1941	254	367	31	No
AU06	Wanindiljaugwa	1948	14	20	1	No
	Australia subtotal		628	908	984	
Europe						
EU01	Konkama Lapp	1951	182	288	26	No
EU02	Konkama Lapp	1931,44,51	73	105	3	Yes
EU03	Lainiovouma Lapp	1952	166	219	1	No
	Europe subtotal		421	612	30	
North American Indian						
ND01	Apache	1932	69	80	17	Yes
ND02	Apache	1935	75	88	14	Yes
ND03	Apache	1936	290	378	94	Yes
ND04	Dogrib	1911,25,59	199	270	20	Yes
ND05	Hare	1956	27	48	2	No
ND06	Kutchin	1947	25	66	6	No
ND07	Ojibwa	1930	204	371	-	Yes
ND08	Ojibwa	1949	372	481	6	No

ND09	Paiute	1880	123	139	30	No
ND10	Shoshone	1860-90	83	95	17	No
ND11	Shoshone	1880	107	128	33	No
ND12	Slavey	1911,51	63	77	11	Yes
	N AmerInd subtotal		1637	2221	250	
North American Inuit						
NU01	Angmagsalik	1884	35	40	6	No
NU02	Labrador	1776	143	168	47	No
NU03	Takamiut	1927,64	49	64	2	No
NU04	Belcher Island	1958-61	48	70	11	Yes
NU05	Iglulik	1921-22	151	178	53	Yes
NU06	Iglulik	1949	280	334	11	Yes
NU07	Iglulik	1961	528	645	20	Yes
NU08	Iglulik Seasonal Cycle	1960-61	85	104	37	Yes
NU09	Netsilik	1922-23	409	502	99	No
NU10	Copper	1922-23	206	272	38	No
NU11	Nunamiut	1885-95	84	98	14	No
NU12	Nunamiut + Tareumiut	1900-15	256	304	37	No
NU13	Nunamiut	1960	96	116	19	No
	Inuit subtotal		2370	2895	394	
	Totals		**6717**	**8935**	**2138**	

In total, the GCBS Database contains records for 6717 living people and 2218 deceased ancestors who provide genealogical linkages between living people. It is difficult to count households and camps or villages represented in the files because of diversity in the nature of the datasets (synchronic or diachronic, focus on residential units or focus on individual people, etc.), but my best computation here says the Database holds censuses of approximately 2138 discrete residential units including households, camps or villages and larger regional populations at one or more points in time.

The sets span almost two centuries and come from five continents and a broad range of habitats. Aside from the nomadic Lappish reindeer herders, all of the societies that appear here relied primarily or exclusively on undomesticated food resources, but the range of variation in those resources was great.

The heterogeneity of the societies is complemented by the homogeneity of the group composition data that are available for all of them. Each data source minimally contains both of the following:

- an exhaustive list of the residents (or in a few cases, the adult residents) of at least one camp, settlement or village
- enough information about consanguineal and affinal relations among adults to permit the preparation of a conventional genealogical diagram of the community as a whole.

If either was absent from a source, data from that source was not acceptable for inclusion here.

Many of the sources that meet the minimal requirements contain other usable kinds of data as well. Examples include the following:

- Ages.
- Neighborhood and household memberships.
- Genealogical census data for more than one camp, settlement or village at a single point in time, or for one or more of those co-residential groups at several points in time.
- Additional relational data and conceptual group membership data that permit the exploration of special features of the societies represented here.

Outline of the Database

The GCBS Database has the following components:

Manual The file you are reading now includes an overview of the Database, details concerning its construction and operation, figures and tables, notes on quality control and comparability of datasets, an outline of some conceptual problems that must be solved to analyze the data productively, and a brief review of the historical and theoretical background of the project, acknowledgements, references and a table of source documents that yielded each dataset.

Data Folders Each dataset occupies its own folder. Each set has a unique identification number (e.g., AF01, NU13, etc.) that appears at the beginning of the following: a) the folder name, b) the names of all files in the folder, and c) each record in the data file.

Optimally each folder contains the following four categories of files:

- **Key** Each dataset contains a systematic textual introduction, including sources, research site locations, research and publication dates, a description of the data file and a Key to all codes used in the file. The Inuit datasets also include a Quick Tabulation statistical summary of the data which appears at the bottom of the Key file. (Some of the keys are known to be incomplete and will be upgraded as soon as possible.)

- **Data** The numerical data file contains a 3-line header (1 title line, 1 blank line, 1 column header line) followed by the data records.

- **Genealogical Diagrams** One or more genealogical diagrams of the entire population recorded in the data file appear in the Inuit folders, but have not yet been transferred to the other folders.

- **Map** A sketch map showing the locations of the camps or villages in which the population lived at the time of the census is present in each Inuit folder, but is not yet available for the other folders.

Suggested Uses

The following is a brief sketch of a few of the more obvious topics that can be investigated with these data. A broader but historically dated discussion of this topic appears in the Theoretical Background section below.

At the present time, simple descriptive statistics pertaining to the sizes of camps, households, sibling sets, lineages, and other kinds of groups in band societies are rare and relatively difficult to compare cross-culturally. The GCBS Database should yield a great many synchronic and diachronic analyses of group sizes that are easy to perform and easy to interpret cross-culturally.

Sex-age distributions and some of the demographic measures that can be derived from them should emerge quickly to amplify and clarify our current understanding of basic demographic processes in small-scale human societies.

Marriage practices can be explored in the data by ascertaining frequencies of occurrence of various marital statuses (single, married, widowed), marital forms (monogamy, polygyny, polyandry, levirate, sororate, "gerontocracy"), and marital exchanges (sibling exchange, direct and indirect exchange of spouses between unilineal descent groups).

Post-marital residence, long a central issue in the study of hunter-gatherer social organization, can be explored by ascertaining the relative frequencies with which people do and do not co-reside with a broad range of relatives (e.g., parents of either or both sexes, full and half siblings of the same or opposite sex, parents' siblings, parallel and cross cousins, grandparents). Hence, the residential data should yield measures of unilocality, bilocality and neolocality, and, to some extent, of endogamy and exogamy.

Since all of the data are organized and coded uniformly, it should be possible to examine one society at a time, a group of societies that share one or more characteristics in common, or all of the societies together, either as a whole or as two or more subsets between which cross-cultural comparisons can be performed.

Content of the database

The GCBS Database does not pretend to be encyclopedic. I collected, coded and diagrammed all of the data in the GCBS Database between 1978 and 1982, and it reflects what I found then. I stopped collecting and processing the data when I "burned out" on this and all of the other work in academic anthropology that had dominated my life since the mid-1960s.

In mid-2001, I picked up more or less where I left off in 1982. Since then I have worked primarily on systematizing everything I did earlier, and on organizing and formatting it using technology that was not available almost a quarter of a century ago. Although the format, structure and operation of the GCBS Database reflect the technology of 2001,

the content of the Database does not reflect anything that has happened in the academic world since 1982, and it omits a good bit that occurred prior to 1982 but did not find its way into the Database before I put the project on hold indefinitely.

Data Selection

Despite the great cultural and geographical diversity of the societies included here, the nature and quality of the group composition data that are available for them meet uniform minimum standards. To be accepted for inclusion, a data source contains both a) an exhaustive list of the residents (or adult residents) of at least one camp or village at one point in time, and b) enough information about consanguineal and affinal relations among adults to permit preparation of a conventional genealogical diagram of the group as a whole. In other words, a minimally acceptable data source contains at least one ostensibly complete genealogically-based census of at least one discrete camp or village. In three cases, all from Europe (see below), the people in question herd domesticated animals; all others are exclusively or predominantly hunter-gatherers.

Sources that meet the minimum requirements may contain other systematically recorded, individual-level demographic and organizational data as well, such as ages, household memberships, and clan affiliations. Furthermore, most of the acceptable sources deal with more than one camp or village at a single point in time or with one or more of those co-residential groups at several points in time. Finally, while the genealogical data that appear in some sources are limited to primary links among people who were present in a camp or village on the day when a genealogical census was performed, other sources contain extremely rich relational data that permit construction of broad and densely interconnected genealogies as much as seven generations deep.

Data Preparation

The first step in processing an accepted source was to draw one or more genealogical diagrams that unequivocally depicted all stated and implied relations among all people in the genealogical census, and to assign unique identification numbers to each person, living or dead, who appeared on the diagrams. Figure 1 is a sample diagram. I return to it later to discuss some of its details.

The second step was to numerically code all relevant information about each person to whom an identification number was assigned, and enter it into a table. The data include personal identification number, sex, age, current marital status, identification numbers of father, mother and all known current and former spouses, and from one to thirty-five codes for the groups to which a person belonged. Those groups include camps, settlements or villages; households; spatially distinct clusters of households within camps as well as tribal affiliations, clans, lineages, moieties, sections, and other conceptual groupings.

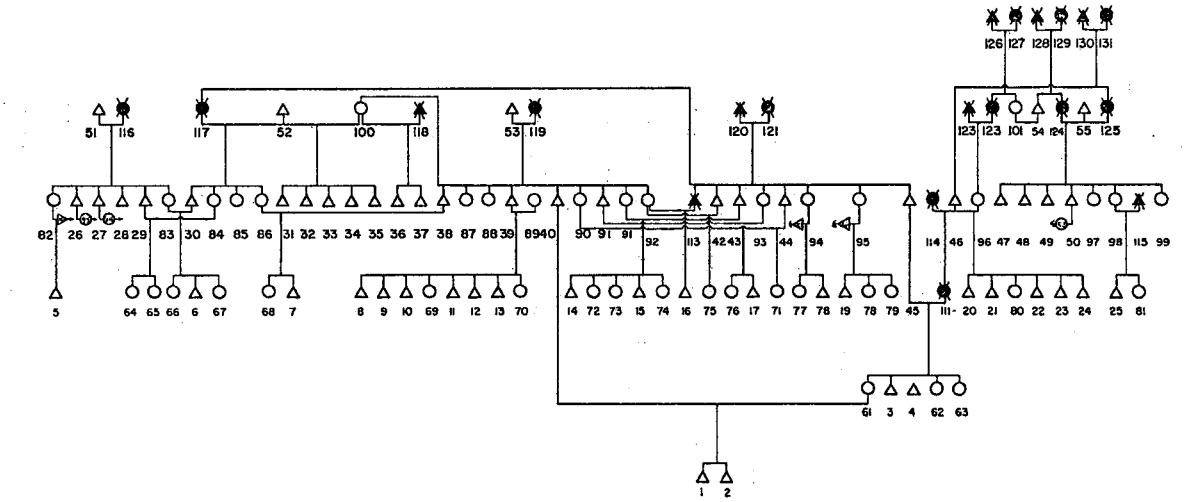

Figure 1. Sample genealogical census diagram: Nunamiut 1960 from Gubser 1965.

The third step was to convert the data to an electronic format, check it for accuracy, format and document it properly, and organize it in its final form for distribution via the World Wide Web.

Data Quality Control

Much of the work that went into preparing these data for publication was devoted to turning sows' ears into silk purses or reasonable approximations thereof. Although many sources were examined and rejected for failure to meet the minimum standards described above, all of those that were accepted presented significant conceptual or technical problems no two of which were just alike.

The ultimate value of the GCBS Database depends in large part upon my success in establishing and maintaining strict data quality control at every step. This was perhaps the single most demanding part of the project, but because of the enormous diversity of the data sets I find it impossible to discuss the problems and my solutions to them in a way that I find satisfactory. A brief overview must suffice.

Validity First and perhaps most important is the question of the relationship between the people on the ground in a given society and the published data that pertain to them. Since I could not return to the field to check the data directly, I had to rely on indirect measures, the most important of which was the internal consistency of the raw data. Contradictions within sources range from obvious typographical errors to less obvious disagreements between two or more entries in a table or diagram, to elusive and often perplexing disagreements between narrative texts, tabular and graphic data, and statistical summaries.

Generally speaking, simple and poorly documented sets are more internally consistent than complex and well documented sets, but small, simple sets are a lot less valuable and interesting than large, complex sets. So a central problem was to tease apart the contradictions in the rich sets and at least make them internally consistent even if that resulted in imposing some order that was missing from the raw data. Examples of the problems here include finding the same person in two different places at the same time, finding a person identified as one's spouse in one place and one's parent in another, finding textual descriptions of camps or households that are inconsistent with accompanying genealogical and census data, and so on.

Precisely how I solved each of the hundreds of problems of this kind that I found in 41 data sets containing records for nearly 9000 people is impossible to say at this point.

Operating on the assumption that no one else is likely to invest as much time and effort as I have in attempting to solve these problems, I have resolved them to the best of my ability, coded my solutions as if they were "God's Truth", and omitted the extensive footnotes that would have been required to pinpoint inconsistencies, explore alternative solutions to the problems they posed, and justify my own decisions in each instance. However, I have had two research assistants evaluate most of the data sets independently of me and of each other, and compare my codes and diagrams with the raw data, in search of superior ways to present the materials. I am confident that investment of additional time and effort in this regard will not significantly enhance the quality of the data; nevertheless, the diagrams and linkage codes will facilitate further investigations if anyone wishes to conduct them.

Coding reliability Assuming that the raw data, after intensive analysis aimed at removing contradictions, did indeed reflect some external reality on the ground, the next major quality control problem was to code it properly. I discuss this matter below with regard to specific variables that were especially problematic. But the general problem was to make sure that my coding did not "drift". In other words, I had to make sure I coded the same thing the same way every time I saw it. I dealt with this issue first by making the codes as simple as possible, then by making the coding rules absolutely explicit. If I encountered a coding problem with a later data set that had some bearing on how I might have coded earlier sets, I returned to the earlier sets that were implicated, revised all of the sets concurrently, and replaced the old procedure with the new one. My approach no doubt resulted in some arbitrariness and rigidity that others might have handled differently, but I am confident that it kept me honest.

Data entry reliability Assuming that I assigned the best of all possible (new) codes to the best of all possible (old) data, my next major task was to put the data into formats and media that would make them usable without introducing transcriptional or typographical errors. The diversity of the data sets yielded considerable diversity in the procedures used within each set to maintain the highest level of confidence in the end product. The primary check was based on internal consistency, augmented by as much redundancy as I could build into the files without overloading them. For example, comparing numerical data sets with genealogical diagrams confirms ID numbers for

ego, parents and spouses, sex and marital status codes, and in many cases residency codes. Sorting and/or filtering on parent ID numbers yields sibling sets; sorting/filtering on physical group codes yields household and other residential groupings; sorting on age reveals discrepancies in age data; confirming that all spousal coding is symmetrical eliminates incorrectly coded marriages, and so on almost indefinitely. Given the amount and complexity of the data that is in the GCBS Database, I am confident that some errors remain, but not many.

Notes on the Datasets

The 41 data sets included in the GCBS Database are stored in six regional folders:

- Africa
- Asia
- Australia
- Europe
- North American Indian
- North American Inuit

To display the list of datasets while reading the following descriptions, toggle to the homepage.

Africa Colin Turnbull's Mbuti Pygmy data sets are very large and rich, as is Lorna Marshall's !Kung data set. Comparable data sets were generated by the Harvard Bushman Project and published in 1964 and 1967 (and subsequently I believe), but I stopped working on the GCBS Database before I extracted those data.

Asia Von Furer-Heimendorf's Chechu set from India is the largest and richest set I found from Asia, with Watanabe's Ainu set coming in a distant second but with a lot of depth. The Vedda and Semang sets are small but valuable.

Australia The two largest and richest sets from Australia are Rose's from Groote Eylandt near the Arnhem Land coast, and my own from the Alyawarra of Central Australia. Unfortunately I seem to have lost the Tiwi (1928) data set. The few other sets included here are useful since rare, but are miniscule. Since all Australian Aborigines were hunter-gatherers, the tiny amount of empirical band composition data published for Australia prior to 1982 is a great disappointment.

Europe The three data sets from Europe pertain not to hunter-gatherers but to reindeer herders. In societies that practice arranged marriages, it is often remarked that since you may not marry the one you love, you must learn to love the one you marry. That philosophy underlies my inclusion of data sets for nomadic Lapp communities from Northern Europe. They are the only band composition data that I located for all of Europe, so I included them even though the people are herders rather than hunter-gatherers. If you have trouble with this decision, please ignore the Lapps.

North American Indian The twelve North American Indian sets could be subdivided into two main subgroups. The Southwestern United States group includes Goodwin's Apache and Julian Steward's 19th century Paiute and Shoshone data. The Canadian Subarctic group includes Dogrib, Hare, Kutchin and Slavey, with Northern Ojibwa as a far outlier.

North American Inuit The Greenland and Labrador data sets are old and interesting, while the Ungava Peninsula and Northwest Alaska sets are not so old but probably are more interesting that they appear to be. The richest sets in the entire Database pertain to the Central Arctic; viz., the Iglulik, Netsilik and Copper Inuit. The original data for these groups was collected during the Fifth Thule Expedition 1921-1924 and was quite rich without further refinement. However, the data received a great deal of further refinement and expansion by David Damas during fieldwork in the Central Arctic in the 1960s. My own contribution to refining the data even further occurred as a result of very close collaboration with Damas in the late 1970s when both of us were on the faculty at McMaster University. The Central Arctic data sets are large and extraordinarily rich, and are as complete and correct as we could possibly make them. I am enormously grateful to David Damas for his generosity in providing the data and his enthusiastic cooperation in refining them.

Understanding the Data Files

Descriptions appear below in the order in which the relevant files appear in each data folder:

- Numerical Data File
- Genealogical Diagrams Files
- Key File
- Map File

Numerical Data

Data Classes Table 1 is an example of a data table on its way to becoming a data file. The column header indicates how the data records are laid out.

	1. Basic					2. Spouses		3. Physical Groups			4. Conceptual Groups		5. Link
ID	**Sex**	**Age**	**MarS**	**Fa**	**Mo**	**Sp1**	**Sp2**	**PG1**	**PG2**	**PG3**	**CG1**	**CG2**	**Link**
1	1	1	1	40	61	0	0	1	14				A.17
2	1	2	1	40	61	0	0	1	14				A.08
3	1	28	2	45	111	68	59	1	15				A.12
4	1	36	2	47	103	74	0	1	15				B.03
5	1	1	1	50	82	0	0	1	5				C.18

Table 1. Sample data table.

From left to right in Table 1, there are five classes of tabular data variables. Variables or Classes of variables that are not used in a data file are omitted to improve legibility and reduce file sizes. In order to understand exactly which variables are used in each data file, please consult the Key that goes with the file.

- Class 1 variables include identification number, life status, sex, age, current marital status, and identification numbers of father and mother. All people are coded on all Class 1 variables.

- Class 2 contains identification numbers of spouses. For each society, the number of Class 2 variables is the largest number of spouses of any person in the society, and that number is highly variable.

- Class 3 variables contain codes for physical groups in which people live, such as camps or villages, households, and spatially defined neighborhoods of households within camps or villages. All people have at least one Class 3 code. For each society, the number of Class 3 variables is the largest number of residential groups that I could extract from the source, and that number is highly variable.

- Class 4 variables contain codes for conceptual groups to which people belong such as tribes, clans, lineages, moieties and sections. This kind of data generally is not available, so Class 4 codes are used only rarely. For each society, the number of Class 4 variables is the largest number of conceptual groups that I could extract from the source, and that number is highly variable.

- Class 5 contains a single variable which I call Linkage. The values for that variable are codes, symbols, abbreviations, names or some other kind of descriptors that identify each person in the table in a way that allows a user to locate that person in the source document. It is a linkage code that serves as a key or index for putting people back into their ethnographic contexts. This single Class 5 linkage variable is used whenever it is feasible to do so.

In addition to the substantive variables included in Classes 1-5, each record in the data files begins with a 4-character file identification code (File) and a unique 4-character record identification number (Rcrd).

Time and the coding of data Three temporally defined types of data sets appear in the series.

- Synchronic sets
- Short-term diachronic sets
- Long-term diachronic sets

Synchronic sets pertain to camps or villages at only one point in time. Hence, graphic and tabular data in these sets depict the people in question at one moment in their lives.

Short-interval diachronic sets pertain to camps or villages at two or more points in time separated by intervals of days or weeks. Typically such data sets portray shifts in locations and group compositions that occur during part or all of a seasonal cycle. Data in these sets depict short sequences of events in the lives of people who collectively experience few or no births, deaths, marriages or other changes in statuses and roles during the periods in question. Although genealogical diagrams used with short-interval diachronic data sets do not differ from those used with synchronic sets, there is an important difference between synchronic and short-interval diachronic files with regard to Class 3 tabular data. In the latter, changes in a person's residential group memberships (which by definition do not exist in synchronic sets) are represented in the numerical tables by a chronologically ordered series of codes for the villages or other locations in which the person resided at stated times during the period in question.

Long-interval diachronic data sets contain two or more genealogical censuses that were made at one general or specific location, but were separated by years or decades during which major changes may have occurred as a result of ordinary demographic processes such as births, deaths, marriages and migration. With few exceptions, changes in personnel and deficiencies in genealogies are so pervasive that it is not feasible to depict long-interval data in single sets of diagrams and tables. Rather, it is more convenient and informative to treat each census as a synchronic data set and use Class 5 linkage codes to facilitate their interconnection whenever that is necessary or desirable. Hence, long-interval diachronic sets usually are structured as if they were separate synchronic sets, but file labels and linkage codes reveal their underlying genetic relationships. Exceptions are noted whenever they occur.

Tabular Data Codes Except for cases in which alphabetic raw data serve as Class 5 linkage codes, all of the tabular data are numerically coded.

Table 2 defines the Class 1-2 tabular data codes. Since Class 1 and 2 variables and values are common to all data sets, this single key is repeated in the Key file that appears in each folder. Class 3-5 tabular data codes are unique to each data set, and keys to them appear at the beginning of each set.

Var Class	Variable Name	Values	Value labels	Examples
1	ID Number	1 -> i i+1 -> j j+1 -> k k+1-> 999	Living males Living females Living people unknown sex Dead people either sex	001-037 038-080 081-105 106-118
1	Life Status	0 1	Dead Alive	
1	Sex	0 1 2	Don't know Male Female	
1	Age	0 1 -> 99	Living = don't know; dead = N/A Age in years at time of census	

1	Current marital status	0 1 2 3 4	Living = don't know; dead = N/A Never married Married Divorced Widowed
1	Father's ID number	0 1-> 999	Don't know See ID Number above for definitions
1	Mother's ID number	0 1 ->999	Don't know See ID Number above for definitions
2	1st Spouse's ID number	0 1 -> 999 9nnn	Don't know or not applicable (N/A). See ID Number above for definitions. 9nnn = "former spouse".
2	Nth spouse's ID number	0 001 -> 999 9nnn	Don't know or not applicable (N/A). See ID Number above for definitions. 9nnn = "former spouse".

Table 2. Code key for Class 1 and 2 variables.

Class 1-2 Tabular Data Codes Since the keys are intended to be self-explanatory, most individual symbols and codes need not be discussed in detail here; however, some aspects of the coding process require brief explanations.

ID Numbers First is the assignment of identification numbers. To facilitate visual examination of the tabular data and to incorporate redundancy that improves data quality control, I assigned ID numbers as indicated in the Examples column above.

Within these categories, ID numbers were assigned at random, but more or less in the order in which individuals happened to appear on genealogical diagrams as I proceeded across the figures in rows from lower-left to upper-right. In most but not all sets, knowing this numbering sequence will allow you to locate a person on a diagram when all you know is the person's ID number, and perhaps those of his parents or spouses.

Generally speaking, I skipped a block of numbers at the end of each of the first three categories in the table above so I would have space to add records for people I might discover after I assigned ID numbers. That happened fairly frequently as I scoured the text of each source document for additional clues concerning linkages between people, people who were away from the camp when the census was done, and so on. So blocks of numbers that appear to be missing from the files were deliberately omitted to facilitate my entering "late arrivals" and to improve data quality control.

Deceased people are of two kinds: those who are mentioned explicitly in a source (e.g., "X's deceased father, A"), and those whose existence I inferred from circumstantial evidence that appears in a source (e.g., A and B, the inferred parents of X and Y, when a source says that X and Y are full siblings whose parents are dead). In every case in which deceased people can be inferred from the text, they have been inferred, inserted

into the diagrams regardless of whether they appeared in diagrams (if any were included) in the original source, and coded as if they had been mentioned explicitly in the source.

The records in each file were sorted in ascending order by ID Number before the unique file.rcrd serial numbers were inserted at the beginning of the records. Therefore, records for living people appear at the top of the file, and those for deceased people appear at the bottom of the file.

Beware of an exception to the numbering convention described here, which occurs in the ND09 Paiute 1880 data set. At some point fairly late in the data entry phase, I discovered that I had failed to record nine children of unknown sex and had not left enough unused numbers between the records for the living and the dead to accommodate all nine of them. So I added them to the bottom of the file rather than make all of the changes in the data file and the genealogical diagram that would have been required to bring the set into full conformity with the numbering convention described here. This presents no analytical problems, but it can be a bit confusing when you look at the file and see some records that appear to be in the wrong place.

Life status All people are coded for life status at the time of the census: 1=alive, 0=dead. In addition, records for deceased people show age=0, marital status = 0, and all residence codes = 0.

Records for living people may refer to people who live outside the camp or village to which the data file pertains. For example, if X's wife left her husband and children temporarily to visit her parents in another village and was absent when the census was conducted, she would be included in the file on genealogical grounds since she is the wife of X, the mother of X's children, perhaps the sister of Y who lives next door, and so on. However, she would be marked as "absent" in the residential group fields. So simply counting all of the "living" people in a data file will not necessarily tell you who was present at the time of the census. That information resides in Class 3 Physical Group variables that are discussed below.

Sex All people are coded for sex: 1=male, 2=female, or 0=unknown. The latter is used when an ethnographer or census-taker says something like: "the household consists of X, his wife, and their three children".

Age All people are coded for age in years at the time of the census whenever that data appears in a source. Almost all sources that contain age data - and many do not - state it as current age rather than as date of birth. I have entered current age with the understanding that age can be converted to year of birth by a simple computation if it is ever needed in the latter form. For this variable, zero (0) means "unknown" when it applies to a living person, and "not applicable" when used with one who is deceased.

Marital Status All people are coded for current marital status: 1=never married, 2=married, 3=divorced, 4=widowed, 0=unknown or dead. "Married" is relatively easy to

identify and code; “never married” is somewhat more difficult to establish beyond a reasonable doubt in many cases; “divorced” and “widowed” can be quite difficult to detect and even more difficult to code especially in polygynous societies. Obviously all four of these categories are shaped in part by my own language and culture, and all of them must be interpreted in light of their indigenous definitions and connotations as stated in the sources. For this variable, zero (0) means “unknown” when it applies to a living person, and “not applicable” when applied to one who is deceased. For a broader discussion of this topic, see *Spouses* below.

Parents Identification numbers that designate parents and spouses refer to the individuals to whom those numbers are assigned in the first column of tabular data. In Table 1, the person whose ID number is 26 is the son of the man whose ID number is 51 and the woman whose ID number is116, and the husband of the woman whose ID number is 95. Therefore, 51 and 116 appear as 26‘s entries for father and mother, and 95 appears as his first spouse. If you then find person 95, a woman, in the first column of the table, you will see that her spouse is person 26.

In order to eliminate unnecessary redundancy from the tabular data, children’s identification numbers are not listed with their parents’; however, to identify all members of a sibling set, simply scan down the father and/or mother columns in the table and identify all individuals who share both parents (full-siblings) or only one parent (paternal or maternal half-siblings).

In most sources, information concerning one’s parents is ambiguous; specifically, very few sources indicate whether the people designated as one’s parents are biological genitor and genitrix, adoptive or step-parents, or classificatory kin who are terminologically and perhaps behaviorally equivalent to biological or adoptive parents. In order to facilitate cross-cultural comparisons, I have always inserted the codes for one’s biological parents in the spaces allocated for parent codes whenever a source distinguishes between biological and non-biological parents. However, adoptive relations that are designated as such in a source are symbolically depicted in the genealogical diagrams and may be retrieved if necessary. Known classificatory relationships have been omitted entirely. When coding from sources from which desirable degrees of precision and detail are absent, I have accepted available information at face value.

Spouses Coding of spouses is difficult. Because of enormous differences in the thoroughness with which ethnographers and others have reported on living and often re-married ex-spouses, temporarily absent spouses, deceased spouses, and informal matings that have yielded off-spring, I have established several tests that must be passed by a putative spouse or former spouse before I accept that person’s identification number as a legitimate entry among the Class 2 codes.

- If a living man and living woman are described in a source as husband and wife, I code them accordingly regardless of whether they are reported to be living together

or apart: the question of where they are living is addressed in the Class 3 residence codes.

- If a living man and a living woman are described in a source as being divorced from each other or as in some functionally equivalent relationship, I code them as "divorced spouses" if and only if the genealogical census includes living or inferrable descendants of that union; otherwise, I disregard the source's report and omit any reference to the fact that they once were spouses; otherwise, the sampling error that would result from my including some unknown percentage of temporary marriages would yield uninterpretable statistics. When a 9 appears as a prefix to a spouse's 3-digit ID number, the person so marked is a former spouse.

- If a source reports that a person is the child of two people who are not currently married to each other, I code the parents as if they are divorced from each other, even in those very rare cases where the source indicates that the parents were never married to each other.

It might be argued that my tests for spouses necessarily yield unjustifiable lumping that obscures important distinctions, and that they place undue emphasis on biological as opposed to sociological relations. However, the number of instances in which each rule has been invoked is miniscule and can have no effect whatever on the statistics that the body of data as a whole can yield; furthermore, the linkage codes will allow anyone who questions my lumping to examine individual cases in detail by returning to the sources. Conversely, my failure to invoke the rules would have resulted in a proliferation of very rarely used codes that would have held little or no value for the vast majority of people who may wish to analyze the data quantitatively.

Class 3-5 Tabular Data Codes Codes for Class 3 - 5 variables are unique to each data set and are discussed in detail when they are introduced in the Key that accompanies each set of tabular data.

Class 3 Physical Groups. These variables indicate the on-the-ground group or groups in which each person lived at the time of a census. Each person is coded as a resident at several levels in a hierarchy of physical residence types if a hierarchy of residence types is characteristic of the person's society and if the data are sufficient to that end. For example, a person may be coded as a member of a household, a neighborhood of households within a camp or village, a camp or village, and a region within the larger area claimed or occupied by the society as a whole. Furthermore, coding at some or all levels in a hierarchy of residence types may be reiterated as many times as necessary within short-interval diachronic data sets.

An adopted child, whose biological parents' ID numbers appear in the Class 1 parent cells, most likely has Class 3 residence (especially household) codes that differ from its biological parents' but are the same as its adoptive parents'. To work with adoptive relations, examine the genealogical diagrams where adoptive relations are indicated

graphically and scan the tabular data for children who reside in households other than their biological parents'.

Class 4 Conceptual Groups I made provisions to include conceptual group memberships wherever I could find such data, but in fact my own data set for the Alyawarra of Central Australia is the only one I have found that contains anything approaching complete and systematic data on a) genealogical relationships, b) physical censuses and c) conceptual group memberships. I have included my Class 4 data in the Alyawarra set.

Class 5 Linkages The Linkage variable is discussed sufficiently under Data Classes above.

Genealogical Diagrams

Figure 1 (above) is a sample genealogical diagram showing relationships and identification numbers. Figure 2 is a key that enables you to decode the symbols used in all genealogical diagrams.

In most data sets, each genealogical diagram depicts all of the people who lived simultaneously in a single camp or village, and its caption identifies that camp or village. But there are two kinds of exceptions to the general rule.

The first occurs with short-interval diachronic data sets in which a single diagram depicts all people and relationships that appear in the corresponding table despite the fact that camps merged or split, or that some people may have arrived from or departed to unknown locations during the period of observation. Such diagrams are captioned as, e.g., Iglulik Seasonal Cycle 1961, and the specific dates and places of the various camps in which the people co-resided may be extracted from the Class 3 tabular data.

The second exception occurs in a very few data sets that are characterized by a) large population size, b) high density of intermarriage among descent groups however defined, c) great generational depth, and perhaps d) short-interval diachronic data sequences. My Alyawarra data set from Central Australia is representative of this situation. In these extremely complex data sets, it is impossible to construct intelligible or informative two-dimensional monochromatic diagrams of camp or village populations. Their interconnecting lines form webs that suggest the handiwork of a psychotic spider. In these cases, I chose to simplify the diagrams - but only the diagrams - by constructing them on the basis of patrilineal descent and captioning them accordingly, regardless of whether the society in question has named patrilineal descent groups or even recognizes patrilineal descent as a possibility. At the same time, however, the tabular data in these sets embody exactly the same principles as in all of the other sets.

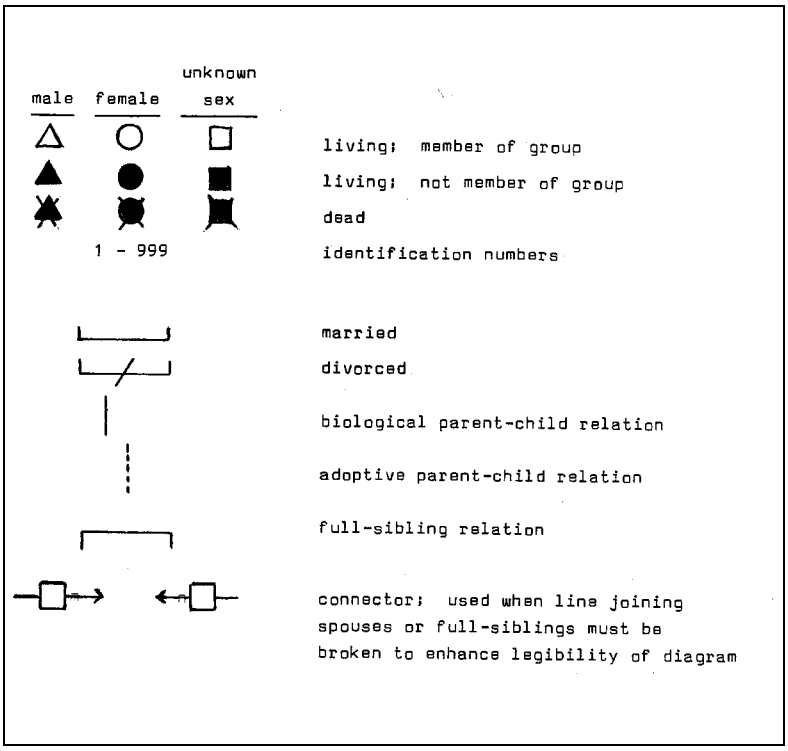

Figure 2. Key to Symbols in Genealogical Diagrams

My willingness to take liberties with the diagrams derives from what I expect will be their two most important uses. First, they provide a simple and familiar kind of visual orientation to the data sets, both for people who are uncomfortable with tabular data, as well as for the rest of us who are comfortable with tabular data but nevertheless find graphic displays to be useful crutches when manipulating them.

Their second *raison d'etra* it that they constitute large-scale links between the tabular data and the raw ethnographic sources, thereby complementing the small-scale (i.e., personal) links provided by the Class 5 tabular data codes. As a result of the redundancy thus introduced, the diagrams are extremely useful for establishing and maintaining data quality control. I must emphasize, however, that the diagrams themselves are not particularly useful for analytical purposes. The data that can be analyzed quantitatively and with confidence in their cross-cultural comparability are in the tables, not in the diagrams.

In most cases, genealogical diagrams are organized so that people who live within a single household are adjacent to each other, but in order to retain the legibility of the diagrams, household and neighborhood boundaries have not been drawn in; rather, those relations are coded exclusively in the tables.

Keys

Each folder contains a Key file with a standardized format. The key files vary to some extent in their size and completeness, with the Inuit files being the most complete. The content of these files is self-explanatory.

Maps

The Inuit files are the most complete at this point (November 2001), and are the only ones for which locational maps have been completed. Ideally a map would be included with each set.

Analytical Problems

Problems of comparison

Myriads of analytical problems derive from working with societies as diverse as Iglulik, Ainu, Semang, Alyawarra, Chenchu and !Kung. Clearly the societies represented in the Database differ among themselves in an endless variety of way; nevertheless, all of the variables that constitute the tabular data sets are unambiguously applicable to all of the societies, and the variables whose values are unique to each society are coded accordingly. Despite my attempt to work primarily with biosocial and demographic matters on which "emic" and "etic" views are likely to differ minimally, it remains true that comparisons of societies that are known to be generally similar to each other (e.g., two Central Eskimo societies) are safer than comparisons between societies that are culturally and geographically remote from each other.

Some of the differences between spatially separated societies derive from differences between the ethnographic traditions associated with those societies. For example, there appear to be more and better data of the kind presented here for Inuit and Subarctic Indians than for Australian Aborigines. That difference is not due to differences in demographic characteristics of the respective societies, but rather, at least in part, to the fact that early anthropologists in Australia were more intrigued by studying native conceptual systems (moieties, sections, subsections, dreamings) than by conducting censuses, whereas their counterparts in the Arctic and Subarctic encountered less fascinating conceptual systems and paid more attention to the composition of residential groups. Likewise, some of the data sets contain very few linking relatives beyond the group of people physically present at the time of the census, while others contain very rich relational data including deceased ancestors going right back to Adam and Eve. Factors such as these result in uneven coverage of the world's hunter-gatherer societies, and contribute significantly to the problems intrinsic to systematic cross-cultural sampling and comparison.

Next come problems of culture contact and culture change through time. It could be argued that it is not meaningful to study post-contact societies if one's research

interests actually focus on pre-contact topics. But concern with this issue can easily become excessive or misplaced. For example, the distinction between pre- and post-contact is difficult to maintain for societies such as the Chenchu of south-central India who have been ‘‘contacted” repeatedly and forcefully by technologically and politically advanced societies for hundreds or even thousands of years. But if we cope with the Chenchu situation by defining pre- and post-contact strictly in terms of contact with European societies, we may be guilty of ethnocentrism. Perhaps the long- interval diachronic data contained in this series will be of some use in determining how much and what kind of differences the pre / post contact distinction makes in residential group compositions in hunter-gatherer societies. In any event, since all 19th and 20th century band societies are far removed from the Pleistocene, using data from any of them may be problematic in studies of human prehistory and evolution.

Then there is a sampling problem. For some societies, I have been able to locate data for only one band at one point in time, but for others I have extracted data for multiple bands at multiple points in time. Compare 135 residential groups in the 467-person Chenchu data set with 1 residential group in the 14-person Wanindiljaugwa data set. In attempting to generate meaningful cross-cultural comparisons, these disparities must be handled in mathematically and ethnographically appropriate ways that may be related to procedures developed in conjunction with Murdock’s (1967) *Ethnographic Atlas* (Naroll 1970).

Hypothetical Band Profile software

To this point, I have spoken of bands as if I know what they are, but in fact there is no consensus in the literature. Broadly speaking, residential groups are classified as bands if they are small (mean size of 25) and nomadic, subsist by hunting and gathering, and have no formal leader and no formal organizational ties with other units of the same kind (Lee and DeVore 1968a passim; Damas 1969 passim). But within this category, there are major differences in cohesiveness; boundedness; seasonal variability in size, composition, and dispersion; integration into larger regional populations; functional specialization of groups; subsistence base; and so on. Given the great heterogeneity of so-called band societies, there is good reason to doubt the continued utility of the category. Just as it may not be productive to class bats, birds and butterflies together simply because all of them fly and have names that begin with the letter “b”, it may not be productive to group Ojibwa, Aranda, and Tareumiut together on the basis of gross similarities that conceal more important but less conspicuous differences. A long term goal of the project is to develop methods for detecting order amidst diversity, instead of continuing to try to impose order on diversity.

One approach would be to develop analytical software to generate band profiles and analyze all of the profiles from several different perspectives.

By “band profile”, I mean a mathematical representation of a band that shows its size and sex-age structure; the percentage of its members who reside patrilocally, matri-locally, bilocally, neolocally, and so on; its rates of endogamy and exogamy; its rates of

monogamy, polygyny and polyandry; the genealogical position of a band leader if one is indicated; aspects of subsistence including variety, density, spatiotemporal predictability, and mobility of resources; and a summary of data on location, climate, history of alien contact, and quality of the ethnographic data.

The software should be able to generate reliable and comparable summaries of all of the profile features of every band in the data file. It should be flexible enough to yield several different kinds of profiles, depending upon which pattern detection criteria are selected for each analytical run. It should be able to use either individuals or marital pairs as units of analysis to generate band profiles, and it should be able to use band profiles as units of analysis to generate distributions of the entire universe of societies in a multidimensional space that is defined by the variables used to generate the profiles.

To reach this goal, it would be useful to develop several sets of decision rules with which to generate reliable and meaningful band composition profiles. A major problem here concerns post-marital residence. Murdock (1949), Steward (1955), and Service (1971) dealt with the matter to some extent, but their work is too superficial to be of any particular value in this project. The exchange between Goodenough (1956) and Fischer (1958) pointed out some of the more difficult and subtle problems in this area and a series of papers by Helm (1965, l969a, 1969b) suggests one approach to quantifying and statistically analyzing residence practices.

Despite the relevance and importance of all these papers, a great deal of ambiguity, inconsistency, and arbitrariness are unresolved. The following are examples of the analytical problems that remain:

- To ascertain residence practices, we may use either individuals or marital pairs as the unit of analysis. If we focus on individuals, then husbands and their wives are classified differently from each other; if we focus on marital pairs, then polygyny and polyandry are especially troublesome.

- Dealing with unmarried adults may be problematic. We may disregard all of them; disregard only those who do not have co-resident married children, but consider those who have them; or consider all of them. The second alternative is intuitively appealing and is used frequently, but there seems to be no theoretically sound reason for choosing it instead of the others.

- Neolocal residence may be difficult to isolate. Perhaps most people would agree that a young couple and their infant reside neolocally when the couple has no parental-generation or own-generation sponsor in the group in which they live. It would be more difficult to obtain unanimous agreement that they reside neolocally thirty years later when they still have no own-generation or parental-generation sponsors, but do have a married child living with them.

- In some of the band composition charts, deceased ancestors (ghosts) are included, while in others, only living people appear. Hence, there are some cases in which we

can use “ghosts” when we generate band profiles and others in which we cannot. If we use the ghosts, we enhance the depth and precision of the analysis of certain bands, but do so at the expense of decreasing their comparability with bands in which no ghosts appear.

Since all of the problems outlined here have more than one reasonable solution, we must be able to analyze all of the data with various combinations of solutions. By selecting several sets of decision rules to generate profiles, the utility of each criterion could be examined empirically, and some of the possible solutions could be rejected if they yielded random rather than patterned distributions of profiles.

Because of the nature of both the problems and the data, the work outlined here cannot yield definitive answers to the questions raised, but it can provide partial answers to current questions and suggest ways to change the questions so that more meaningful answers may emerge in the future.

My greatest concern here is not whether the data are perfect – the answer is NO - but whether they are useful. I am sanguine in that regard, but I leave it to others to make the final decision.

Theoretical Background

I have placed this theoretical note at the end of the document for two reasons. On the one hand, I think the GCBS Database can stand alone, without being propped up by theoretical arguments. It is what it is, and the multitude of ways in which it can be used in the 21st century probably are more apparent to many readers than they are to me. On the other hand, there may be some justification for including a brief theoretical background statement to put the development of the Database into some kind of historical context. Attaching this backgrounder at the end is a compromise between putting it at the beginning and omitting it entirely. You do not need to read this section in order to use the Database effectively.

Development of the GCBS Database began in response to my general concern over the lack of empirical data with which to address important theoretical concerns among anthropologists and others who study human history. This was an important problem in 1978 and probably still is in 2002.

Just about everybody agrees that it would be useful to know more about the composition, organization, and inter-group articulation of Pleistocene societies, but they are gone forever. Since they are gone, contemporary hunter-gatherer bands play vitally important roles in at least four schemes that deal with human sociocultural evolution. Those who construct typologies based on elaborateness of subsistence methods or social hierarchies among contemporary societies place them in the “simplest” or “lowest” category (e.g., Service 1966; Flannery 1972). Those who focus on exclusively human evolutionary sequences place them at the ‘‘oldest’’ or ‘‘earliest” end of a lengthy

chain of autocatalytic development (e.g., Wilson 1975). Those who attempt to reconstruct human prehistory through ethnographic analogy and ethnoarchaeological research see band societies as the “last remnants” of Pleistocene society (e.g., Gould 1978). Finally, those who study human social behavior as further developments of nonhuman primate and social carnivore patterns see hunter-gatherer bands as a crucial “link” between nonhuman and post-industrial societies (e.g., Crook and Gartland 1966, Eisenberg et. al. 1972, Jay 1969). Although each scheme has its own distinctive explanatory and methodological attributes, it is not uncommon to find all four of them intertwined somewhat indiscriminately (e.g., Service 1971).

Empirically, there are at least three approaches to these issues. The first is to conduct ethnographic studies of modern societies that seem to be most similar to Pleistocene societies; the second is to conduct paleontological, archeological, and ethnohistorical studies of Pleistocene, or Pleistocene-like, groups; the third is to investigate the social organization of nonhuman primates and social carnivores. Each approach has serious limitations, but together they may help us to understand our origins better than we do now.

Historically these groups have received a great deal of attention from a broad range of anthropological theorists for more than a century. They were the “savages” in the grand evolutionary schemes of the 19th century (Morgan 1877; Tylor 1871); they provided much of the raw material for the emergence of 20th century evolutionary and ecological anthropology (Steward 1955; White 1959; Service 1971) and for the development of hologeistic theory testing in the tradition associated with Murdock (1949, 1967) and the Human Relations Area Files; and they have been of central importance for French structural anthropologists from Durkheim (1915) to Levi-Strauss (1969). Since they constitute the only living human link - tenuous and equivocal though it may be - between the modern world and the world as it may have looked 10,000 or more years ago, they are of particular interest to human paleontologists, paleodemographers, and archaeologists (Binford, 1972; Binford and Chasko 1976; Cohen 1977; J. Clark 1976; G. Clark 1979; Howell 1973, 1979; Isaac 1976; Weiss 1973; Yellen 1977).

During the last third of the 20th century, the study of band societies became something of a cottage industry as witnessed by events such as the Man the Hunter (Lee and DeVore 1968) and Band Societies (Damas 1969) conferences, international conferences on hunter-gatherer societies in Paris (1978) and Quebec (scheduled for 1980), and the ongoing Harvard Bushman Project (e.g., Lee and DeVore 1976). Nevertheless, quantitative, cross-culturally comparable data on demography and social organization were not available from a large sample of band societies. The GCBS Database should assist in placing cross-cultural studies of band societies on much broader and firmer empirical foundations than they have had heretofore.

Specific theoretical issues that spurred development of the GCBS Database in the late 1970s include the following:

- Patrilocal or bilocal - the patrilocal / bilocal residency controversy

- Levels or trees - differences between levels and trees models of human biosocial evolution
- Continuous or discontinuous - rates of change within and between levels if the levels model remains competitive with the trees model.

Patrilocal or bilocal The absence of empirical data on band compositions has been especially conspicuous in seemingly endless debates concerning postmarital residence (Birdsell 1970; Ember 1975; Fischer 1958; Goodenough 1956; Helm 1965; Hiatt 1966; Lee and DeVore 1968; Peterson 1976; Radcliffe-Brown 1930; Service 1971; Spence 1974; Steward 1955; Yellen. 1977). Radcliffe-Brown (1930), Steward (1955), Birdsell (1970), Service (1971) and Williams (1974) contend that patrilocality is the norm in both ideological and statistical senses among pristine hunter-gatherers, and that non-patrilocality is a deviation from the norm. On the other hand Hiatt (1962, 1965), Helm (1965), Lee (1977) and Yellen (1977) strongly support the notion that bilocality is typical of such societies and that the patrilocal band is an ideal that is rarely if ever realized. Since the people on both sides of the controversy have used somewhat limited and biased samples of data to support their positions, it should be worthwhile to examine a very large and hopefully unbiased group of bands with regard to the statistical portion of this problem. I believe that both positions are unduly simplistic, and that a detailed multidimensional analysis of the data will reveal patterns that are fundamentally different from, and considerably more complex than, any that appear in recent publications.

Continuous or discontinuous If we assume that hunter-gatherer bands constitute a "type" of society, is it possible to make any empirically defensible and theoretically stimulating generalizations about the organization and composition of most or all members of the class?

Let's consider models that incorporate evolutionary grades or levels of development. This approach immediately raises questions about evolutionary linkages between band societies and their nearest neighbors on the "scale" of human social evolution - questions that pertain to transitions into and out of the band level - and they also raise questions that pertain to changes that might have occurred within that level.

If band societies occupy a segment of an uninterrupted gradualistic evolutionary continuum, can we arrange individual members of the group in some kind of order along that continuum; e.g., are some of them nearer the upper or lower end of a continuum of sociocultural complexity? If transitions to or from the band level are examples of abrupt, discontinuous evolutionary (or revolutionary) change, what can we learn about societies that are at or near the transition points or boundaries between band and non-band?

Consider the assumption that human social evolution into, through, and out of the band level was continuous, incremental, and gradual. If such were the case, and if GCBS data has any bearing at all on questions of human social evolution, it should be possible to arrange the groups in an empirically and logically defensible order from "lowest" to

"highest" on some kind of multidimensional scale of sociocultural complexity, and the boundaries of this level should be indistinct.

On the other hand, a growing body of theory (Thorn 1975; Zeeman 1976; Dawkins 1976; Maynard Smith and Price 1973; Maynard Smith and Parker 1976; Lenneberg 1967) concerning discrete state systems, evolutionarily stable strategies, and catastrophism support the notion that change from one level to another was discontinuous, radical, and sudden. If the discontinuous model were valid, transition points between family-level and band-level and between band-level and tribal-level should be distinct; however, it might or might not be possible to order societies within the band level from lowest to highest on any useful scale. Data from groups such as Northwest Coast Amerindians and Konkama Lapps (Pehrson 1957) may be especially useful for testing these two competing hypotheses, since those groups are different from, but closely related to, hunter-gatherer band societies.

Levels or trees There are well known limitations on inferences about the Pleistocene that we can draw from modern (19th and 20th Century) hunter-gatherer band societies (Lee and DeVore 1968b, Service 1971). Most obvious are the facts that modern hunter-gatherers often live in so-called "marginal environments" that are radically different from those in which most humans presumably lived in the Pleistocene, and that all of them long ago ceased to live in a world populated exclusively by other hunters and gatherers. Although the limitations are real enough, their importance varies with the nature of one's questions, and are particularly troublesome for functionalists or group selectionists. We can avoid some of those limitations by adopting a different theoretical orientation.

Instead of supposing that band societies comprise a level or stage of human biosocial evolution, we can argue that 20th Century band societies are just as modern as 20th Century post-industrial societies, that their histories are equally long and diverse, and that they undoubtedly had to do a great deal of changing just to retain their "bandness" as bands become out-numbered and engulfed by other kinds of societies. If this position has any merit, it would be futile to try to arrange modern band societies on any kind of evolutionary continuum, with or without major discontinuities at hypothetical transition points. Rather, we should explore the data with cluster analytic techniques so that relations among bands can be represented in forms that are more compatible with the concept of phyletic or phylogenetic trees, than with that of phylogenetic levels (Hodos and Campbell 1969). This approach allows us to investigate biosocial processes without undue concern for the unique history of each society, but it means that inferences from modern to Pleistocene groups must rest on an understanding of biosocial mechanisms rather than on hypothetical evolutionary sequences that we cannot test effectively. The trees model, which is based on notions of individual selection and biosocial lability, contrasts sharply with the levels model, which is based on notions of functionalism, group selection, and biosocial conservatism. Since these two models attempt to do somewhat different things with the data, they are not competitors in the strict sense; rather, to "test" them is to compare the effectiveness with which each accommodates the data and stimulates further research.

As a century and a half of anthropological theorizing demonstrates, it is entirely possible to debate all of these topics forever without securely tying the discussion to empirical data. But if the objective is to solve problems rather than win debates, data is useful. The GCBS Database is a contribution toward that end.

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At the University of California at Irvine 2001-02 Douglas R. White has been responsible for making the GCBS Data Base available on the Internet. His small notice on the web to the effect that my Alyawarra data had gone missing prompted me to act. His intellectual excitement, analytical prowess, moral support and technical expertise have been invaluable to me, as have the computing and network facilities he has made available to me at UCI. Doug's work is supported by NSF Grant BCS-9978282 (Anthropology Division) awarded June 1999-May 2002 on "Longitudinal Network Studies and Predictive Social Cohesion Theory".

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Data Sources

This table lists the datasets included in this edition of the GCBS Database and the source or sources from which each was extracted.

Region	Name	Date to which data applies	Source
Africa	AF01 !Kung	1952	Marshall, Lorna (1976) *The !Kung of Nyae Nyae*. Cambridge: Harvard University Press.
Africa	AF02 Mbuti forest camps	1957	Turnbull, Colin M. (1965) The Mbuti Pygmies: an ethnographic survey. *Anthropological Papers of the American Museum of Natural History* 50(3):139-282.
Africa	AF03 Mbuti Epulu village	1957	Turnbull, Colin M. (1965) The Mbuti Pygmies: an ethnographic survey. *Anthropological Papers of the American Museum of Natural History* 50(3):139-282.
Asia	AS01 Ainu	1880-85	Watanabe, Hitoshi (1972*) The Ainu Ecosystem*. Seattle: University of Washington Press.
Asia	AS02 Chenchu	1940	von Furer-Heimendorf, C. (1943*) The Chenchus*. London: Macmillan.
Asia	AS03 Semang	1924,50	Schebesta, Paul (1954) Die Negrito Asiens 2: Ethnographie der Negrito, Part 1: Wirtschaft and Soziologie. *Studia Instituti Anthropos 12.* Wien-Modling: St. Garbiel Verlag.
Asia	AS04 Vedda	1885	Seligmann, Charles G. and Brenda Seligmann (1911) *The Veddas*. Cambridge: Cambridge University Press.
Aust	AU01 Alyawarra	1971	Denham, Woodrow W. (1978) *The Alyawarra Ethnographic Data Base*. New Haven: Human Relations Area Files Press.
Aust	AU02 Gundangborn	1948	McCarthy, Frederick D. and Margaret McArthur (1960) The food quest and the time factor in Aboriginal economic life. In CP Mountford, ed., *Records of the American-Australian scientific expedition to Arnhem Land, vol. 2, anthropology and nutrition.* Melbourne: Melbourne University Press.
Aust	AU03 Miwuyt	1967	Shapiro, Warren (1973) Residential grouping in northeast Arnhem Land. *Man*, v.8, no.3; 365-383.
Aust	AU04 Ngatatjara	1966	Gould, Richard A. (1969) *Yiwara : foragers of the Australian desert.* New York: Charles Scribner's Sons.
Aust	AU05 Wanindiljuagwa	1941	Rose, Frederick G. G. (1960) *Classification of Kin, Age Structure and Marriage amongst the Groote Eylandt Aborigines: A Study in Method and a Theory of Australian Kinship.* Berlin: Akademie-Verlag.
Aust	AU06 Wanindiljuagwa	1948	McCarthy, Frederick D. and Margaret McArthur (1960) The food quest and the time factor in Aboriginal economic life. In CP Mountford, ed., *Records of the American-Australian scientific expedition to Arnhem Land, vol. 2, anthropology and nutrition*. Melbourne: Melbourne University Press.
Europe	EU01 Lapp Konkama	1951	Pehrson, Robert N. (1964) *The bilateral network of social relations in Konkama Lapp District*. Stockholm: Universitetforlaget.
Europe	EU02 Lapp Konkama	31,44,51	Pehrson, Robert N. (1964*) The bilateral network of social relations in Konkama Lapp District*. Stockholm: Universitetforlaget.

Europe	EU03 Lapp Lainiovouma	1952	Whitaker, Ian (1955) Social relations in a nomadic Lappish community. *Samiske Samlinger, bd. 2.* Oslo: Norsk Folkemuseum.
Amer-Indian	ND01 Apache	1932	Goodwin, Grenville (1969*) The social organization of the western Apache*. Tucson, University of Arizona Press.
Amer-Indian	ND02 Apache	1935	Goodwin, Grenville (1969*) The social organization of the western Apache*. Tucson, University of Arizona Press.
Amer-Indian	ND03 Apache	1936	Goodwin, Grenville (1969) *The social organization of the western Apache*. Tucson, University of Arizona Press.
Amer-Indian	ND04 Dogrib	1911,25,59	1. Helm, June and Nancy O. Lurie (1961) *The Subsistence economy of the Dogrib Indians of Lac la Matre District of the Northwest Territories.* Ottawa: Northern Coordination and Research Center, Department of Northern Affairs and Natural Resources. 2. Helm, June (1965) Bilaterality in the socio-territorial organization of the Arctic Drainage Dene. *Ethnology* 4(4):361-85.
Amer-Indian	ND05 Hare	1956	Helm, June (1965) Bilaterality in the socio-territorial organization of the Arctic Drainage Dene. *Ethnology* 4(4):361-85.
Amer-Indian	ND06 Kutchin	1947	Slobodin, Richard (1969) Band organization of the Peel River Kutchin. Ottawa : *National Museum of Canada Bulletin 179.*
Amer-Indian	ND07 Ojibwa	1930	Rogers, Edward S. (1979) Unpublished MS.
Amer-Indian	ND08 Ojibwa	1949	Taylor, J. G. (1972) Northern Ojibwa communities of the contact-traditional period. *Anthropologica* (n. s.) 14(1):20-30.
Amer-Indian	ND09 Paiute	1880	Steward, Julian, H. (1938) Basin-Plateau Aboriginal Socio-Political Groups. Washington, DC: *Bureau of American Ethnology Bulletin 120.*
Amer-Indian	ND10 Shoshoni	1860-90	Steward, Julian, H. (1938) Basin-Plateau Aboriginal Socio-Political Groups. Washington, DC: *Bureau of American Ethnology Bulletin 120*.
Amer-Indian	ND11 Shoshoni	1880	Steward, Julian, H. (1938) Basin-Plateau Aboriginal Socio-Political Groups. Washington, DC: *Bureau of American Ethnology Bulletin 120.*
Amer-Indian	ND12 Slavey	1911,51	Helm, June (1961) The Lynx Point People. The Dynamics of a Northern Athapaskan Band. Ottawa: *National Museums of Canada Bulletin 176.*
Inuit	NU01 Angmagsalik	1884	J. Hansen (1914).... In Thalbitzer, William, ed. *The Ammassalik Eskimo; contributions to the ethnology of the East Greenland natives, vol. 2.* Copenhagen: B. Luno.
Inuit	NU02 Labrador	1777	Taylor, Garth J. (1974) Labrador Eskimo settlements of the Early Contact Period. Ottawa: *National Museums of Canada Publications in Ethnology 9.*
Inuit	NU03 Takamiut	1927,64	Graburn, Nelson H.H. (1969) *Eskimos without Igloos*. Boston: Little, Brown.
Inuit	NU04 Belcher Island	1957-61	Freeman, M. (1967) An ecological study of mobility and settle-ment patterns among the Belcher Island Eskimo. *Arctic* 30(3):154-175.
Inuit	NU05 Iglulik	1921-22	1. Mathiassen, Therkel (1928) *Material culture of the Iglulik Eskimo. Report of the Fifth Thule Expedition 1921-1924, vol. 6(1)*. Copenhagen: Gyldendalske Boghandel 2. Damas, David (1963) Igluligmiut kinship and local groupings: A structural approach. Ottawa: *National Museum of Canada Bulletin 196*, plus unpublished data.

Inuit	NU06 Iglulik	1949	Damas, David (1963 and n.d.), based in part on unpublished census data recorded by Fr. Trebaol (1949). Igluligmiut kinship and local groupings: A structural approach. Ottawa: *National Museum of Canada Bulletin 196*.
Inuit	NU07 Iglulik	1961	Damas, David (1963) Igluligmiut kinship and local groupings: A structural approach. Ottawa: *National Museum of Canada Bulletin 196*, plus unpublished data.
Inuit	NU08 Iglulik	1960-61 Seasonal Cycle	Damas, David (1963) Igluligmiut kinship and local groupings: A structural approach. Ottawa: *National Museum of Canada Bulletin 196*, plus unpublished data.
Inuit	NU09 Netsilik	1922	1. Rasmussen, Knud (1931) The Netsilik Eskimo: social life and spiritual culture. *Report of the Fifth Thule Expedition 1921-1924, vol. 8(1-2). Copenhagen*: Gyldendalske Boghandel. 2. Damas, D. (1969) Band Societies. *National Museum of Canada Bulletin 228,* plus unpublished data.
Inuit	NU10 Copper	1923	1. Rasmussen, Knud (1932) Intellectual Culture of the Copper Eskimo. *Report of the Fifth Thule Expedition 1921-1924, vol. 9.* Copenhagen: Gyldendalske Boghandel. 2. Damas, D. (1969) Band Societies. *National Museum of Canada Bulletin 228,* plus unpublished data.
Inuit	NU11 Nunamiut	1890-95	Spencer, Robert F. (1959) *The North Alaskan Eskimo: A Study in Ecology and Society.* Washington, DC: Bureau of American Ethnology Bulletin 171.
Inuit	NU12 Nunamiut + Tareumiut	1900-15	Burch, Ernest S., Jr. (1975) *Eskimo Kinsmen: Changing Family Relationships in Northwest Alaska.* St. Paul, MN: West Publishing Co.
Inuit	NU13 Nunamiut	1960	Gubser, N. J. (1965) *The Nunamiut Eskimo: Hunters of Caribou.* New Haven: Yale University Press.