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Social anthropological census for cognatic societies and its application among the Rungus of Northern Borneo

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SOCIAL ANTHROPOLOGICAL CENSUS FOR COGNATIC SOCIETIES AND ITS APPLICATION AMONG THE RUNGUS OF NORTHERN BORNEO

Introduction

Social anthropologists have not generally made explicit the methods that they have used in collecting census data. To my knowledge, the only published discussions of census methods are those by Richards,¹ Mead,² Barnes,³ Colson,⁴ and that in *Notes and Queries on Anthropology* (sixth edition).⁵ The lack of discussion in the literature of census methods is all the more unusual as the construction of each census varies to a large degree according to its goals.

The purpose of the social anthropological census presented here is the collection of data, amenable to statistical analysis, on the composition and development a processes of the social isolates of a society. This census thus differs significantly from previously published censuses in that it specifically focuses on system-specific social isolates. By "system-

¹ A. I. Richards, "The Village Census in the Study of Culture Contact," *Africa*, 8 (1935), 20-33.

² Margaret Mead in her study of an Indian tribe, *The Changing Culture of an Indian Tribe*, Columbia University Press, New York, 1932, included a detailed "schematic census" of the entire tribe from which it is possible to reconstruct her census schedule. In *Coming of Age in Samoa*, Blue Ribbon Books, New York, 1928, and *Growing Up in New Guinea*, William Morrow, New York, 1930, Mead included in the appendices copies of the record sheets that she used in addition to the quantitative data. However, in *New Lives for Old*, William Morrow, New York, 1956, she expressed dissatisfaction with having included such detailed appendices on her field work methods as she felt that they had been generally ignored.

³ J. A. Barnes, "The Collection of Genealogies," *Human Problems in British Central Africa*, 5 (1947), 48-55.

⁴ Elizabeth Colson, "The Intensive Study of Small Sample Communities," in Robert F. Spencer, (ed.), *Method and Perspective in Anthropology*, The University of Minnesota Press, Minneapolis, 1954.

⁵ Royal Anthropological Institute of Great Britain and Ireland, *Notes and Queries on Anthropology*, Routledge, London, sixth edition, 1951.

specific", I refer to social entities that have relevance only for a specific social system. Each social system may be viewed as being composed of social entities distinctive to it and of the relationships between such entities with respect to scarce goods and services. I refer to any entity which only has relevance for a particular society as a social isolate of that system.⁶

This census also differs from the usual demographic census in the same manner. A demographic census may or may not be based on the indigenous social isolates, but if it is, it is more by accident than by specific design. If we accept the proposition that the health of a population, and therefore, its population dynamics are just as dependent on intrinsic factors of sociocultural behavior as disease agents,⁷ then the closer a census approximates the indigenous social isolates, the culture-bearing units of the society, the more amenable the derived demographic data will be for prediction. This is because (1) there is a greater likelihood that any item of sociocultural behavior relevant for population dynamics will be shared by all the members of a locally recognized culture-bearing unit than would be the case with the members of a demographic category which ignores local distinctions and includes a heterogeneous assemblage of people; and (2) the number of such sociocultural factors having demographic effects are more likely to be limited in a culturally homogeneous population than in a heterogeneous one.⁸

The census presented here, however, not only provides quantitative data on the composition and developmental processes of the social isolates of the society being investigated. It also is constructed so that

⁶ See G. N. Appell, *The Nature of Social Groupings Among the Rungus Dusun of Sabah, Malaysia*, Ph.D. Dissertation, The Australian National University, 1965; *The Nature of Social Groupings in a Cognatic Society: The Rungus Dusun of Sabah, Malaysia*, paper presented at the 65th Annual Meeting of the American Anthropological Association, Pittsburgh, 1966a; "Observational Procedures for Identifying Kindreds: Social Isolates Among the Rungus of Borneo," *Southwestern Journal of Anthropology*, 23 (1967), 192-207; and "The Jural and Ritual Nature of Social Groupings Among the Rungus," n.d., forthcoming.

⁷ See G. N. Appell, "Research Design and Explanation in Recent Studies of the Health Consequence of Culture Change," ms. (a); Steven Polgar, "Health and Human Behavior: Areas of Interest Common to the Social and Medical Sciences," *Current Anthropology*, 3 (1962), 159-205; and Norman A. Scotch, "Medical Anthropology," in Bernard J. Siegel, (ed.), *Biennial Review of Anthropology: 1963*, Stanford University Press, Stanford, 1963.

⁸ I have discussed this problem at length with regard to the indigenous peoples of Sabah in G. N. Appell, "A Survey of the Social and Medical Anthropology of Sabah: Retrospect and Prospect," to appear in *Behavior Science Notes*, Vol. 3, No. 1 (1968).

the usual demographic conclusions may be drawn, albeit on a different social base.⁹

*Census Schedule*¹⁰

1. Record the name, sex, date of birth, and genealogical relationship of all members of each domicile.
2. Ascertain the date and method of joining domicile, i.e., by marriage, birth, adoption, rejoining of divorced child, incorporation (as of aged relatives), etc.
3. Collect the mating history of each member of the domicile, including illegitimate as well as legitimate unions; divorces; miscarriages; abortions; and offspring, living or dead, for each. Ascertain biological fathers of illegitimate children. Determine approximate dates for initiation and termination of all unions and methods of termination, i.e., whether by separation, divorce, or death. For all offspring determine name, sex, date and order of birth, and date of death.
4. For each member determine his biological relationship with spouse (as well as past spouses) and the kin terms used to refer to each other previous to marriage.
5. For each marriage determine who were the sponsors for the bride and groom.
6. For each member and his present and past spouses determine membership in and date of joining political grouping, ethnic grouping, and kin grouping, if any exist larger than the nuclear family.
7. For each domicile member obtain the village and/or hamlet of birth; other places of residence in sequence; and particularly place of domicile prior to marriage, at time of marriage, and after marriage; determine reasons for moving where possible.

⁹ Measures of divorce frequency may also be figured from the data provided by this census following the procedure outlined by J. A. Barnes, "The Frequency of Divorce," in A. L. Epstein, (ed.), *The Craft of Social Anthropology*, Tavistock Publications, London, 1967.

¹⁰ This census schedule has its origins in that prepared by J. D. Freeman (*Sociological Census*, 1956, duplicated) to whom I owe a deep intellectual debt. It has been modified substantially on the basis of that proposed by Colson, *op. cit.*; as a result of my experience in administering it among the Rungus of Northern Borneo; and by a further refinement in its goals so as to focus explicitly on the system-specific local units and those elemental units recognized by the society itself for the purposes of sleeping, cooking and eating, procreation, rearing of children, agricultural production, and so on.

8. For each married individual determine length of time of post-nuptial residence in other than own domicile and when and where established own domicile.
9. Determine membership in domestic sub-groups which may exist for purposes of sexual intercourse, eating, sleeping, and production activities.
10. Ascertain the ownership of each domicile.
11. Record the sibling set of each domicile member and those of his past and present spouses. Include names; sex; order of birth and marriage; spouses; where living at present, or if dead, place of death and burial; and membership in kin group, political unit, and ethnic group. Kin group, political unit, and ethnic group membership of siblings' spouses may also be useful.
12. Record the parents of all domicile members, including names; sex; marital history; place of domicile at present, or if dead, where died and where buried; and membership in kin group, political unit, and ethnic group. Also determine their biological relationship and kin terms used for each other.
13. For adoptions ascertain age at which adopted; date of adoption; order of adoption if there are more than one; relationship of adopted to family adopting; membership of adopted in kin grouping, political unit, and ethnic group; reason for adoption; status of parents of adopted.
14. Ascertain the religious affiliation of all domicile members, their siblings, and parents; amount of schooling of all members, their siblings, and parents; and any official status of the same individuals.
15. For each absent member of the domicile as well as for children no longer living with parents determine date of leaving, where living, reasons for leaving, and whether absence is considered temporary or permanent.

Application of the Census to the Rungus

Field work among the Rungus was carried out from 1959-1960 and from 1961-1963. The above census was not used until I had a sufficient command of the language to administer it myself and until I was knowledgeable enough in the Rungus social system to have identified the significant social isolates. It was first given in the village in which we resided to test it and make any necessary revisions. Following this, four other Rungus villages were enumerated. In addition, a census

was taken of a village on the edge of Rungus territory which included Dusun-speakers other than Rungus. Finally, at the end of our field work in 1963 a second census of Marudu, the village in which we lived, was made.

As stated previously, the various censuses of Rungus villages were organized and administered according to the major social isolates of Rungus society. These are the domestic family, the long-house, and the village.¹¹ A domestic family is formed when a newly married couple, after a year of postnuptial residence in the bride's natal domestic family, builds a separate long-house apartment ideally onto the long-house where the bride's natal family resides. A Rungus domestic family thus most frequently consists of a husband and his wife — the two founders — and their unmarried children. This domestic family may also be joined at a later date by the widowed parent of one of the two founders on the dissolution of the parental domestic family after the marriage of its last child.

The Rungus long-house comes into existence through the lateral accretion of the apartments of individual domestic families, and it may vary in size from 3 or 4 apartments to 20 or more. While a village may include only one such structure, much more frequently it consists of multiple long-houses, up to four or five in number. Each village owns a territory with explicit boundaries which the resident domestic families may use for cultivation but which domestic families resident in other villages may not.

Recording and Processing the Data

In organizing and administering the census in terms of the indigenous social isolates, the primary referent was the domestic family. Each family was first numbered according to its apartment position in the long-house of which it was a member. The genealogical structure of each domestic family was then recorded and on the same page the social and vital statistics of its members were also entered. Offspring who had married and left the domestic family were noted and their vital statistics were included at this point only if they were living in another village and would not be interviewed. Data on the parents and siblings of the two founders were included on a separate sheet and indexed

¹¹ See Appell (1965), *op. cit.*, (1966a), *op. cit.*, and (n.d.), *op. cit.*

according to the domestic family to which they belonged, if they resided in the village being enumerated, or according to their village of residence, if they lived in another village.

I will not go into further detail here on the various methods that were used and could have been used to record and process the data, as they depend largely on personal idiosyncrasies and the specific use to which the data is to be put. Richards,¹² Barnes,¹³ and Colson¹⁴ present various methods of record keeping. Banton¹⁵ discusses a method of coding data on the kinship structure of households. The genealogical method and the symbols used in it have been discussed amply by Rivers,¹⁶ Sociological Research Committee,¹⁷ Culwick,¹⁸ Taylor,¹⁹ and Barnes²⁰ as well as in the various editions of *Notes and Queries on Anthropology*.²¹

Problems of Reliability

It is of course an anthropological truism that the members of other societies are not as receptive to or as conditioned by investigations into personal matters as are Americans nor as convinced that correct answers will not cause embarrassment and difficulties at a later date.

¹² Richards, *op. cit.*

¹³ Barnes (1947), *op. cit.*

¹⁴ Colson, *op. cit.*

¹⁵ M. P. Banton, "A Technique for Tabulating the Kinship Structure of Households," *Man*, 56 (1956), 60-62.

¹⁶ W. H. R. Rivers, "A Genealogical Method of Collecting Social and Vital Statistics," *The Journal of the Anthropological Institute of Great Britain and Ireland*, 30 (1900), 74-82; "The Genealogical Method of Anthropological Inquiry," *Sociological Review*, Vol. 3, No. 1 (1910), 1-12; "The Genealogical Method," B. Freire-Marreco and J. L. Myres, (eds.), *Notes and Queries on Anthropology*, The Royal Anthropological Institute, London, fourth edition, 1912.

¹⁷ Sociological Research Committee, "The Standardization of Pedigree Charts," *Man*, 32 (1932), 120-121.

¹⁸ A. T. Culwick, "Standardization of Pedigree Charts," *Man*, 32 (1932), 272.

¹⁹ Guy A. Taylor, "The Genealogical Method of Anthropological Enquiry," *NADA*, 2 (1924), 33-48.

²⁰ Barnes (1947), *op. cit.*

²¹ H. C. Conklin ("Ethnogenealogical Method," in Ward C. Goodenough, [ed.], *Explorations in Cultural Anthropology*, McGraw-Hill, New York, 1964) has raised questions as to the procedures to be used in eliciting data by the genealogical method. His thesis in short is that native categories should be used as the categories of the anthropologist distort the data. To illustrate this he presents some extremely interesting data on the results of using this approach among the Hanunóo.

The reliability of the data solicited by questionnaires and census schedules in non-Western societies is thus a central problem of studies employing such techniques. However, there are certain steps that the investigator can take to minimize the collection of false information.

First of all, in my censuses of Rungus social isolates, I endeavored at all times to have in my employ a native who was familiar with the people involved. He served as a restraint against providing deliberately false answers and was able in a number of cases to correct false data after we had completed our interview.

However, this technique is not foolproof as one example illustrates. In interviewing a "widow" who lived with her unmarried daughter, I elicited the response that her husband was dead. This statement was made in the presence of my native assistant as well as the members of her long-house. No one by any obvious motion or sign indicated that this was not the truth, nor did my assistant correct this at a later date. As it is a ritual delict among the Rungus to imply someone is dead, there seemed little reason to believe her answers were anything but true. However, as we learned by accidental gossip two years later, her husband was alive and living in the same long-house as she. He had been divorced by this alleged "widow" when he took a second wife.

Thus, the reliability of our census data was also improved by this method of keeping our census files open until the last day of field work. By being alert to gossip, contradictions to our census material in various statements overheard or elicited for other reasons, we were able to add materially to the reliability of our data. Then, towards the end of our field work when we had the confidence of our informants and knew enough to make it difficult for them to lead us deliberately astray, we went through all our census data with various key people to check those areas in which we found the least reliability — marriage and divorce.

This problem of collecting reliable data on matters which may be embarrassing to one's informants may be illustrated by a further example. A Government medical officer made a census of a Christianized Dusun-speaking village and collected no histories of polygamy. Four years later I unknowingly censused the same village. I also found no history of polygamy. However, in reviewing at a later date my census data with a past resident of the village who was visiting our field station, I learned that 40 % of my sample of married men had histories of polygamy. I also was able to correct my data on divorces so that the members of the village in actuality turned out to have had 10 %

more previous marriages than reported by the Government medical officer.²²

The reliability of one's census data can thus be markedly improved by (1) employing a local individual who has first-hand knowledge of the individuals being enumerated and who is able to identify with your research goals; and (2) remaining in the area long enough so that the census data can be corrected by collection of information from other sources, such as gossip, inadvertent disclosures, and other types of anthropological inquiries.

Chronology by Social Triangulation

One of the most difficult areas on which to collect reliable data is that dealing with chronology. There appears to be no easy way to correct for the lack of interest by preliterate societies in our method for the temporal identification of events. The technique which we used in the field to correct for this problem of reliability is what may be termed "social triangulation".

A well-known historical event that we could date accurately was chosen such as the onset of the Japanese occupation. We next listed all the marriages, deaths, births and other social events in Rungus society that occurred at that time. Dates for other marriages and births were built up by ascertaining how many seasonal cycles before or after those for which we had fairly accurate dates these others had occurred. Also, once we had a date for a marriage, we then tried to ascertain how many seasonal cycles had occurred prior to the birth of the first child, between the first and second child, and so on. Having identified the dates of births of one set of siblings, we next tried to list all those children born in the village during the same season. This would give us a firm date for one member of other sibling sets, and we could estimate fairly accurately the dates of births of the others in such sets by eliciting statements as to how many seasonal cycles existed between the births of the various siblings.

Uses of the Data Derived

I would like here to indicate briefly some of the uses to which the data derived from the census can be put in elucidating the nature of

²² See Appell (1968), *op. cit.*

the structural and developmental dimensions of a society. First of all, the data can be aged and tests made to ascertain whether changes have occurred in the sociocultural behavior of the society (for example, see Tables 1 and 2). While a significantly greater number of intervillage marriages now take place than previously, residence patterns have not changed significantly among the Rungus. One possible explanation for the increase in intervillage marriages after 1953 may be the fact that prior to this date the political instability that resulted from the Japanese occupation discouraged much intervillage traveling and visiting.

Table 1. *Test for Social Change: Changes in Incidence of Intravillage and Intervillage Marriages.*

	Intravillage	Intervillage	X ²	P
— Marriages consummated prior to 1953	47	21		
— Marriages consummated in 1953 or later	23	30	7.06	<.01

Table 2. *Test for Social Change: Incidence of Residence Types in Intervillage Marriages Consummated Prior to 1953 and After 1953.*

	Uxorilocal	Virilocal	X ²	P
— Marriages consummated prior to 1953	20	1		
— Marriages consummated in 1953 or later	26	4	<1	N.S.

Secondly, by making a census of the same village at two points in time structural process can be delineated (see Tables 3 and 4).

Table 3. *Developmental Processes: Changes in Composition of Rungus Domestic Family.*

	N	Mean	Median	Mode
Marudu — 1960	76	4.64	4—5	4,5
Maruda — 1963	72	4.94	5	7

Table 4. *Comparison Between Villages: Occurrence of Phases in Developmental Cycle of Rungus Domestic Family.*

	Village A	Marudu	
	1960	1960	1963
— Newly formed families	0 %	9 %	12 %
— Maturing families	45	41	33
— Fully-formed families	36	20	21
— Stage of spin-off of children into new families	0	18	19
— Last stage before dissolution	9	5	8
— Anomalous	9	7	6
	99 %	100 %	99 %

The increase in size of the Marudu domestic families is shown in Table 3. Table 4 shows the percentage of the sample at these two points in time by phase in the developmental cycle. These data indicate that the increase in size of the domestic families in Marudu over this period is not a result of a shift towards more families in the fully-formed phase. Instead, by analyzing the mean size of the families in the various phases we find that in each phase the mean size of the families in 1963 was larger than in 1960. This is accountable for not only by a favorable ratio of births over deaths during the period but by the fact that certain less fertile families had left the village during this period.

Thirdly, structural comparisons can also be made between villages (see Table 4). Not only do villages vary in the frequency of occurrence of various phases in the developmental cycle of the domestic family, but villages also vary in the mean size of their member families. Village A has a mean of 4.18 persons per domestic family in comparison to the mean of Marudu in 1960 of 4.64.

Structural comparisons can also be profitably made between societies (see Tables 5 and 6). The mean size of Iban domestic families is not only larger than Rungus families, but there also exists a different pattern of generation span in families of the two societies. This is explained by the fact that Rungus domestic families are founded following the year of temporary postnuptial residence in the bride's natal family. Among the Iban, however, children after marriage seldom leave their natal long-house apartment to form a new domestic family until

the parental domestic family contains two married siblings with one of these having produced offspring.²³

Table 5. *Comparison Between Societies: Iban and Rungus Domestic Family Size.*

	N	Mean	Median	Mode
Iban	107	5.75	5	4
Rungus	118	4.52	4	4,5

Table 6. *Comparison Between Societies: Generation Span of Iban and Rungus Domestic Families.*

	Generation Span				
	1	2	3	4	
Iban (N = 107)	3 %	40 %	48 %	9 %	100 %
Iban (N = 107)	8	78	13	1	100

The ATIT Technique

Residence choice among the Rungus does not result in the activation of any jural relationship but is primarily the result of the desire to associate with certain kinsmen because of ties of attachment.²⁴ This is a distinction made and recognized by the Rungus themselves. Consequently, in such societies where residence does not involve any jural rights, the data derived by this census are particularly amenable to statistical manipulation to discover for the society as a whole what the most significant kin relationships are. The method which I have developed to test for the intensity of various affective ties between kin I refer to as the "Affective Tie Intensity Test".²⁵ Table 7 gives an illustration of this technique.

Test 1 illustrates that females live significantly more frequently in their parental villages than males. Test 2 shows that females live significantly more frequently in the village of their mother when she

²³ See J. D. Freeman, "The Family System of the Iban of Borneo," in Jack Goody, (ed.), *The Developmental Cycle in Domestic Groups*, Cambridge University Press, London, 1958.

²⁴ See G. N. Appell, "Residence and Ties of Kinship in a Cognatic Society: The Rungus Dusun of Sabah, Malaysia," *Southwestern Journal of Anthropology*, 22 (1966b), 280-301.

²⁵ See Appell (1966b), *op. cit.*, for a fuller discussion of this.

Table 7. *Example of the Use of the ATIT Technique:*²⁶ *Comparison of Behavior with Normative Statements and the Discovery of Covert Patterns of Behavior.*

Test	Cases of Residence		X ²	P
	IN	OUT		
<i>Dispersion after marriage of:</i>				
1. Females	133	62	6.91	<.01
Males	87	74		
2. Females in the circumstance of:			7.85	<.01
Mother alive-father dead	41	6		
Father alive-mother dead	6	7		
3. Males in the circumstance of:			<1	N.S.
Mother alive-father dead	17	13		
Father alive-mother dead	8	5		
4. Females in the circumstance of:			8.12	<.01
Mother alive-father dead	41	6		
Both parents dead	64	38		
5. Males in the circumstance of:			<1	N.S.
Mother alive-father dead	17	13		
Both parents dead	45	53		
6. Females with mother alive:			8.20	<.01
Eldest females	14	10		
Non-eldest females	45	5		

is the only parent alive than they do in the village of their father when he is the only parent alive. This suggests that the affective tie between the bride and her mother is the stronger of the two ties. For males, test 3 shows that the presence or absence of a parent makes no significant difference where they reside. Test 4 and 5 again substantiate the former tests. It can thus be concluded that of all the kin ties in Rungus society, the tie between a daughter and her mother takes precedence over that between a son and either of his parents; and on the other hand the tie between a daughter and her father is of little significance.

Some Uses and Misuses of Quantitative Data

Recently there has been important and searching criticism of quan-

²⁶ The abbreviation ATIT refers to the "Affective Tie Intensity Test." In the column "Cases of Residence" the subcolumn "IN" refers to residence in the village of parents or surviving parent; the subcolumn "OUT" refers to residence in some other village than that of parents or surviving parent. In all cases Yates' Correction was used in computing the Chi Square. N.S. = Not Significant.

titative data by cognitive structuralists such as Goodenough²⁷ and Keesing.²⁸ Their position briefly is that quantitative data alone do not provide an adequate description of "social structure"; and furthermore, normative models of a society — what people say they should do — and decision models — the manner in which conflicting values are weighed to arrive at decisions as to what to do — cannot be derived from "statistical models".²⁹

However, the statistical models that the cognitive structuralists refer to are not simply numerical summations of behavior. What they mean by "statistical models" is the quantitative expression of behavior involving choice in terms of the extraneous categories of the ethnologist rather than in terms of the system-specific distinctions recognized by the members of the society themselves. Consequently, the contrasting of decision models with statistical models used in this sense is invalid as these are not at the same contrastive level. The contrast is not between quantitative data and data as to how choices are made in system-specific terms, as such decision data may also be analyzed mathematically to produce a statistical model of behavior on the basis of system-specific distinctions. The contrast that the cognitive structuralists should be making is between rational explanations of behavior that are based on the distinctions that are specific to the system in which it occurs and explanations of such behavior in terms of categories which are foreign to the value system in which the choices are actually made. In this I distinguish rational explanations of behavioral phenomena from functional explanations, a distinction which is frequently confused in the presentation of ethnographic data.

Thus, the contrast of statistical data with decision data hides the fact that any model of sociocultural behavior may utilize quantitative data to further elucidate the nature of the behavior. For example, Keesing states that in building a decision model he is not interested in predicting

²⁷ Ward H. Goodenough, "Residence Rules," *Southwestern Journal of Anthropology*, 12 (1956), 22-37; "Review of G. P. Murdock, editor, *Social Structure in Southeast Asia*," *American Anthropologist*, 63 (1961a), 1341-1347; "Comment on Cultural Evolution," *Daedalus*, 90 (1961b), 521-528.

²⁸ Roger M. Keesing, "Statistical Models and Decision Models of Social Structure: A Kwaio Case," *Ethnology*, 6 (1967), 1-16.

²⁹ An important but apparently unrealized dimension of these decision models is that they include data on the manner in which people justify what they actually do *ex post facto*. For a review and an analysis of the position taken by the cognitive structuralists on sociocultural phenomena, see G. N. Appell, "The Distinction Between the New Ethnography and Ethnology: Is It Valid?" ms. (b).

behavior but in predicting when the members of the society themselves will have failed to anticipate an item of behavior. It would be interesting to know in quantitative terms just how frequently this occurs with regard to any specific item.

Consequently, in raising the important questions that they have as to the value of quantitative data, the cognitive structuralists have not stressed the uses to which it may be put, some of which we have already shown here. Furthermore, their position is based on a rational model for human action while not all behavior is in fact rational.³⁰ Behavior may stem from unconscious motivations, and this may occur with sufficient frequency in any society to form an important covert pattern of behavior. Quantitative data can thus serve as a discovery procedure for covert behavior patterns. For example, we were unable to elicit any statements that the relationship between a mother and her eldest daughter in Rungus society was significantly different than that with other daughters. However, after leaving the field we discovered by analyzing our quantitative data that the eldest daughter resided in a village away from her mother significantly more frequently than her sisters did (see Table 7, test 6). This suggested that there might be other patterns of behavior for the eldest daughter that were significantly different from her sisters. We next investigated the behavior of the eldest daughter after marriage. Among the Rungus, brides frequently refuse to accept the sexual advances of their husbands for a week to several months after the marriage ceremony. This refusal is also expressed in public by behavior such as refusing to go the fields with their husbands, cooking for them, and so on. We found that non-eldest daughters rejected the sexual advances of their husbands after the marriage ceremony significantly more frequently than did eldest daughters.

We have no rational explanations from the Rungus as to why this occurs. We, ourselves, are still not completely certain of all the factors that may have contributed to producing this covert behavior pattern of the eldest female among the Rungus. We are certain, however, of the value of using quantitative techniques as a discovery procedure in the analysis of indigenous, covert distinctions in social behavior.

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³⁰ See Appell (ms[b]), *op. cit.*, for a discussion of some of the implicit assumptions in the theoretical position of the cognitive structuralist.