



Cross-Cultural Surveys Today

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CROSS-CULTURAL SURVEYS TODAY

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INTRODUCTION

This review follows the deaths of two major figures in cross-cultural research: George Peter Murdock and Raoul Naroll. Their joint influence on cross-cultural theory, sampling (73-75, 78, 80, 87), and method (81-84, 86) produced a new era in which the most persistent objections to cross-cultural research were answered.

Cross-cultural research came under attack in the period from 1950-1975, and until the cumulation of replicable results from standard samples (80, 87) many anthropologists had concluded that the endeavor lacked merit. Barnes's (3) criticisms of Murdock's work exemplify the prevailing views of the early 1970s. The pessimism of Murdock's (76) Huxley memorial lecture, while directed to deficiencies of general anthropological theory, also fostered the impression of insurmountable problems in cross-cultural comparisons.

Given this background, the recent resurgence of cross-cultural research may seem surprising. We begin this review with an overview of theoretical orientations related to the resurgence. We then review common criticisms of cross-cultural research, areas of particular progress, and remaining problems of method. Last, following upon two recent reviews of cross-cultural research prior to 1980 (55, 63), we review the progress of substantive work since that time.

THEORETICAL ORIENTATIONS

Cross-cultural research provides an essential component of valid generalizations about human societies. It relies on continual rethinking and reintegration with other streams in anthropology and comparative social science by prac-

tioners from a wide range of social sciences (119). The articulation of different theoretical positions often leads to the cumulative integration of research findings. Murdock's (76) rethinking of anthropological theory in his Huxley lecture is relevant to understanding changing research practices. He argues that the great achievement of anthropology lies in the cumulative corpus of intensive ethnographic observation. He outlines a scientific division of labor that draws upon psychology for basic principles of human behavior and utilizes ethnography, ethology, geography, history, sociology, and related disciplines to detail the complex conditions of human life. In Murdock's view, anthropologists have erred in attributing explanatory power to abstract concepts elevated to the status of concrete realities. He objects to using as explanatory devices reified concepts such as society, culture, lineage, and clan as natural social units. Recent investigations of the political and economic conditions of human behavior are consistent with Murdock's rethinking of the field. They reassert new conceptual underpinnings and reject simplistic assumptions of independent "societies" and their "cultures" as the units of study. We discuss many of these conceptual changes below.

CURRENT DEVELOPMENT OF CROSS-CULTURAL RESEARCH METHODS

Much of the recent impetus for improvements in cross-cultural research methods came from Naroll and his students. Their concerns culminated in two books, one (85) that summarizes social science research findings about social well-being, and a second (63) that summarizes cross-cultural findings up to 1980. The latter begins by discussing several common criticisms of cross-cultural method that include many of Barnes's criticisms (3), but takes a more sanguine view of possible solutions. The various criticisms of the cross-cultural method and responses to them are summarized below.

Units of Analysis

A common criticism of cross-cultural research is that societies at different levels of complexity or scale, such as Tikopia and China, are not comparable (3, 63). This problem is handled in Murdock's work by stratified sampling procedures. Cultures are sampled from a frame of 200 cultural provinces (74, 80). Data are coded for particular pinpoint communities at particular dates. Hence communities within larger units are compared. Another criticism is that cross-cultural researchers may mistakenly assume an identity between culture and society and ignore internal variation (3, 63). Both problems require further improvements in cross-cultural research. In the case of stratified societies, where cultural forms differ by stratum, it may be necessary to have different codes for each stratum. In other cases, where societies differ in

the frequency with which individuals participate in social forms, such as polygyny, the objection can be handled by putting the frequency data in the codes, without dichotomization (123, 124). Although Barnes (3) thinks the problem of internal variation is unique to cross-cultural research, it is equally a problem of the nonquantitative nature of much of ethnography. A promising development is the attempt to produce cross-cultural data sets that incorporate comparable individual-level data (128).

Coding Issues

The criticism that inaccuracies and information loss result from coding cultures with archival data (3, 63) seems unwarranted in the context of ethnography designed to generate archival descriptions. The general anthropological literature, much of which is explicitly comparative, routinely includes secondary analyses of ethnographic data. The scientific gains to be obtained from cross-cultural research are often worth the loss of detail about individual cultural systems. A stronger criticism, based in the ethnoscience tradition (46), is that cross-cultural coding categories may be inappropriate for particular cases; and that a careful distinction should be made between the cross-cultural level of generalizing and the level of ethnographic description. While these are valid caveats about cross-cultural research, they do not invalidate the cross-cultural method; they simply point up the relative costs and benefits of cross-cultural research.

Coding-reliability has been a major preoccupation of cross-culturalists. Although we strongly urge more researchers to publish their reliability findings and annotations, the more important concern may be with coding-validity. Whiting (131) makes a useful distinction between high-inference and low-inference variables. High-inference variables require complex coding judgments; they tend to pertain to phenomena that are not easily observed. Low-inference codes tend to pertain to phenomena that are visible and widely shared within the community—for example, presence of the plow, female contributions to harvesting crops, or the shapes of houses. They may also include observable psychologically oriented phenomena such as father-infant proximity. Many psychological codes (5–8, 100, 101), however, fall into the high-inference category (54). They are often based on a plausible but incorrect argument that high-inference coding lowers coder reliability. This assumption leads to an emphasis on the use of naive coders who are not apprised of the hypotheses of the studies: If coder reliability is high, then the codes are considered acceptable. This procedure does not address a more pervasive validity problem with psychological codes (27)—that naive coders may fill in the codes according to a shared cultural meaning system for such concepts as harshness, affection, or rejection. Hence, cross-cultural codes of psychological variables by naive coders may have high reliability precisely

because they have low validity. In high-inference coding, there may be a trade-off between the traditional coder-reliability approach and coding validity, with validity more likely if the coder has a good knowledge of the subject matter.

Among Murdock's legacies are his cumulative cross-cultural data bases, including the standard cross-cultural sample (80). A great advantage of the sample, because it is standardized, is that variables coded by several different researchers can be integrated into a single analysis. Complaints about Murdock's selection of variables are common, however (3). For example, the *Ethnographic Atlas* (75) contains ten variables for aspects of house construction—easily coded, though without any particular theoretical motivation—but no variables on such important economic phenomena as markets and ownership, or capital intensity of production. Cumulative standard samples remedy the problem to the extent that new studies code for more theoretically motivated variables. Clearly, cross-cultural data bases require regular updating in light of advances in theory (118).

Sampling

Underrepresentation of regions and of societies at the upper end of the complexity scale is a problem in current cross-cultural samples (3, 63). While valid, these criticisms could be leveled at the regional biases of all of American anthropology. Murdock took great pains to code from ethnographies in relatively esoteric languages, but his own interest in Africa led him to oversample from Africa and to undersample from Europe, India, and China. Remedying these problems by augmenting the Standard Cross-Cultural Sample (80) and sampling frame—a task already begun by Murdock (78)—is an important task for the future.

The alternative to sampling is the continuous-area approach where data are coded for all of the societies in a region (37, 56, 57). In the past this was seen as antithetical to the goals of causal analysis, because of Galton's problem. The recent solutions to Galton's problem obviate this objection to continuous-area samples by making the study of intersocietal connections a part of the research program (33–35). Jorgensen's analysis of Western Indians focuses on regional and historical processes within the region, rather than strictly functional models (56, 57). His data set, containing an unusual wealth of ecological data, invites development of further functional models at the regional level, for later replication tests in other regions.

Validity of Statistical Inferences

Societies in a cross-cultural sample are connected via common history, intermarriage, migration, and interactions such as trade and political dominance. Galton's problem pertains to this non-independence of sampling units. Statistically, this leads to underestimating the variance of regression coeffi-

cients, hence, to unreliable statistical estimation. The problem is not unique to cross-cultural comparisons but occurs in any study where there are linkages of kinship, interaction, or common heritage among units of study, including biological heritage (26). The problem goes beyond mere regional clustering of traits. Regional clustering per se can be the result of independent adaptations of societies to geographically clustered environmental features. Only if the values of a trait for a group of societies are significantly different from those predicted by functional adaptations, and if these deviations can be explained by the position of societies in a regionally or historically based network, do we have an instance of Galton's problem. Naroll (81, 83, 84) stimulated interest in solving Galton's problem, recently conceptualized as a problem of spatial autocorrelation (30, 64, 65, 93, 107, 115, 139). Current work generalizes the spatial autocorrelation perspective to the concept of network autocorrelation (33-35, 122), a model that is being actively studied in sociology as well as anthropology.

The network autocorrelation solution to Galton's problem is a kind of regression analysis. Rather than attempting to find a pure sample in which there are no linkages between units, or deflating sample size when doing statistical computations, network autocorrelation explicitly measures the effects of linkages between societies upon their traits. This procedure has the advantage of bringing history, and the world system, back into cross-cultural analysis, rather than trying to make these important phenomena disappear from the sample. The first stage of a network autocorrelation analysis is to compute the network of observed relationships among societies. Past analyses have involved linkages based on language-family membership and geographical proximity; useful arenas for future research include position in networks of trade and political domination. The second phase of network autocorrelation analysis involves a set of computational procedures, recently developed and tested by computer simulations (34, 35). Historical relatedness, in this method, is usually measured by relationships among languages. This is a defensible approach, since much of culture is coded into linguistically transmitted symbols, and language similarity provides a good index of shared culture history, including migration from a common origin. Since societies with a common cultural adaptation often migrate to similar environments (134), distinguishing between history and shared adaptation requires codes both for language history, and for environment and climate.

Replication of results is the focus of much recent work, often motivated by the research design strategies of Przeworski & Teune (97). The problem lies in the difficulty of making repeated inferences from a single data set. Ideally, replication of a finding would be accomplished by drawing a second sample. This procedure is of limited value in cross-cultural studies, however, because of the expense of taking and coding samples, and because of limitations in the number of high-quality ethnographies. One approach is the use of regional

replications, where a model is developed using only part of the sample and replicated on the rest, allowing for an independent test of the final model. An example of this strategy is work on the sexual division of labor that begins with a model for the African subsample, which is tested and modified using data for the entire Old World, and then replicated with data for Oceania and the New World (24, 122).

Most cross-culturalists wish to make causal inferences and to model social systems. Doing so requires use of multivariate models explicitly designed for systems analysis. One of the largest and most accessible revolutions in anthropological method is the proliferation of methods for multivariate analysis. By contrast with models now available, such as log-linear, regression, entailment analysis (22, 121), canonical correlation analysis (31), and optimal scaling (133) the old procedure of computing two-by-two tables seems outdated and extremely limited.

It is especially important for cross-cultural researchers to examine interaction effects. With interaction, the form of a relationship between two or more variables changes with the level of some third variable. A study by White & Pesner (125, 126) suggests that interaction effects may be pervasive for social structural variables. Means of detecting interaction include appropriate forms of multivariate analysis, such as log-linear or regression analysis, but not path (47, 61), entailment (22, 121), or correlational analysis.

Causal inferences from cross-sectional data are weaker than causal inferences from longitudinal data (55), yet cross-cultural data sets are basically cross-sectional, with the added quirk that the societies are all observed at different points in time. Time is in some ways the most difficult problem to deal with, and one that anthropology tends to ignore, perhaps because of the functionalist tradition of synchronic analyses. Although there is a large literature on causal inferences with cross-sectional data sets, all such data sets would be improved by the addition of a longitudinal component.

Lacking longitudinal data, we can still improve the analysis of process with cross-cultural data. One way is to include the date of observation as an independent variable. A second way is to stratify the sample by time, and do replications across time periods, an approach comparable to the strategy discussed above of replicating studies across regions. A third approach is to code for variables that are highly correlated with change processes such as migration, colonization, labor migration, and culture loss (68, 120).

RECENT STUDIES

Whiting's model provides a useful organization of cross-cultural theories (129–131). In this model, economy and ecology provide baseline processes to which maintenance systems, such as household structure, adapt. These main-

tenance systems affect the child's learning environment, and projective systems are formed as extensions of these experiences. A large number of recent studies focus on interrelated propositions about maintenance systems—markets and labor, intensity of production and division of labor, warfare and conflict, or households and polygyny—as well as psychocultural issues of socialization and gender identity, reproductive ritual, gender beliefs and behavior, and expressive systems.

Markets and Labor

A valuable economic dimension is added to cross-cultural surveys by Pryor (94). His data on 60 societies include a number of previously uncoded economic variables including land scarcity and rentals, capital intensity of production, external trade, markets, skilled labor, reciprocal and ceremonial exchange, labor exchange, slavery, and socioeconomic inequality.

Pryor's analyses focus on markets. He argues that, *ceteris paribus*, polygynous societies are less likely to have markets because their households achieve economies of scale that lessen the need for market exchange, and that societies with high female subsistence contributions are more likely to have markets because their households produce an exchangeable surplus. He then hypothesizes that labor markets arise because of rapidly fluctuating productive factors, such as animal husbandry, that cause fluctuations in the need for labor. Pryor finds both hypotheses confirmed when he controls for societal complexity. He also analyzes: the relationship between credit markets and capital intensity; reciprocal exchanges such as bridewealth or dowry; and slavery. He finds slavery is not an inevitable stage of social evolution and develops a model of slavery based on sexual division of labor and family structure, interacting with political circumstances that permit mobilization of force to control the slaves (94).

Patterson (92), in an important theoretical treatment of slavery, codes the standard cross-cultural sample for a number of new slavery variables, including sex ratio of the slave population, status of the children of slaves, frequency of manumission, and legal and social status of slaves. Through careful research with new sources, he finds a number of cases where ethnographers had underestimated the frequency or severity of slavery. He conducts an analysis of large-scale slave systems that links with current thinking about precapitalist world economic systems.

Intensity of Production and the Division of Labor

Studying the origins of agriculture, Pryor (96) finds some support both for the Boserup (14) hypothesis and for the Malthusian argument that density is the consequence of agricultural potential. Contrary to expectation, he finds no support for greater female participation in the transition to agriculture.

Pryor (95) formulates an ecological analysis of the origins of the plow. In order to understand which short-fallow societies adopt the plow, he identifies plow-positive staples, such as wheat, that require extensive amounts of land and considerable quantity or speed of soil preparation. This variable strongly predicts the presence of the plow.

Dow (32) introduces a two-stage regression procedure to make causal inferences about reciprocal feedback relationships between agricultural intensification and craft specialization. His advance in the study of reciprocal feedback systems will interest ecological anthropologists.

Relationships between agricultural intensification, the sexual division of labor, and social structure have been the focus of a series of studies (15, 22–24, 32, 39, 45, 48, 122). Murdock (71, 79) formulated the first clear hypotheses about the sexual division of labor, and provided a valuable set of codes. Later studies using Murdock's codes base their analyses more on childcare constraints than on physical strength (21). White et al (22, 121), postulating a tendency for continuity in task allocation within production sequences, find especially strong entailment structures for three basic subsistence domains—agriculture, animal husbandry, and fishing. A reanalysis of these data using blockmodeling finds 10 blocks of tasks—household goods and services, food gathering and growing, animal products and care, food preparation and processing, finished products, and housebuilding (114).

Ember (39) suggests that increased male participation in intensive agriculture is due to the intensification of female household labor. Burton & White find evidence supporting Ember's reasoning and controverting Boserup's hypothesis about the effects of population density upon female farming. Five ecological variables predict increasing male participation in agriculture—the number of dry months, the use of domesticated animals for subsistence, the plow, Old World cereal crops, and tree crops (24, 122).

In studies of children's division of labor, Bradley (16, 17) finds strong relationships between the adult division of labor and the children's division of labor in ten tasks, as well as between the division of labor in animal care and the value placed on boys and girls. Schlegel & Barry (11, 113) find further relationships between female subsistence contributions and the value placed on girls, premarital permissiveness, and other variables.

Warfare and Conflict

The earliest recognition of the multidimensional nature of tribal warfare is seen in the distinction between internal and external war (89, 90); and in hypotheses that link external war with matrilocality and recent migration (28, 42), and internal war with patrilocality (42). A number of recent studies (58, 59, 91) have extended thinking about warfare and patrilocality to the concept of fraternal interest groups.

One of the problems with the early research on warfare is overreliance on small samples. The most comprehensive warfare codes we know of are by Wheeler (117), who coded the standard cross-cultural sample for 27 variables pertaining to warfare; and by Jorgensen (56), who coded 172 Western Indian societies for 17 warfare variables. Wheeler's variables include plunder, frequency of internal and external war, form of military mobilization, leadership during battle, and the value of war. Jorgensen's include raids to fulfill visions, for slaves, and for women; intrasocietal duels; and presence of buffer zones. Both studies stress different regional patterns of warfare.

Carter (25) finds nonformal military organization to be prevalent in small societies, or those with virilocal residence, while large size and/or uxorilocal residence predict formal military organization. Adams (1) explains widespread exclusion of women from warfare in terms of patrilocal residence with exogamy, in which women have conflicting loyalties during war. Ritter (99) finds that age set organizations are a consequence of continual warfare and seasonal fluctuation of size of the local group.

Ross (102–105) coded 90 societies of the standard cross-cultural sample for 44 warfare variables that form five scales—organization of political power, organization of political authority, patterns of cross-cutting ties, internal conflict, and external conflict. In developing models to explain internal and external conflict, he distinguishes between dispositional variables and social-structural variables. He posits three dispositional variables that affect the psychological propensity to warfare—harsh socialization, affectionate socialization, and male gender-identity conflict. Ross finds that internal and external conflict are both predicted by the dispositional variables but that the two kinds of conflict are predicted by different structural variables. Internal conflict is predicted by the absence of cross-cutting ties within the society and by strong fraternal interest groups. External conflict is predicted by strong cross-cutting ties within the society, endogamy, and the level of socioeconomic complexity. Ross concludes that there is a culture of violence in some societies, but that the focus of violence depends upon social structure.

Ross (106) extends his political analysis to female participation. He notes that female political participation is multidimensional, and develops two scales—organizations or positions controlled by women, and female political activity. He finds that similar dispositional and different structural factors account for variation on these scales. Predictors of female-controlled organizations include socioeconomic complexity, low intercommunity marriage, and low levels of external conflict; predictors of female political activity include high internal conflict, low external warfare, weak fraternal interest groups, and affectionate child rearing. The strong positive relationship between female political participation and internal conflict is counterintuitive but plausibly supported (106, p. 851).

Socialization and Gender Identity

Links between subsistence economy, socialization pressure, and personality type, established by Barry et al (4), are replicated (54) and extended into a number of new areas, including proxemics (67). These socialization data, however, continue to suffer from the methodological weakness of global rating scales and other potentially biasing oversimplifications (54).

Whiting's (132) theory of cross-sex identification, originally formulated to explain male puberty rites, stimulated a large number of cross-cultural studies on the importance of the father in child development, recently reviewed by Reis (98): "Identification with males is an essential component of young boys' psychological identity formation. Denied this opportunity . . . boys are left with a primary feminine identification which may prove to be troublesome. A great number of Western psychological and cross-cultural studies merge to support Whiting's cross-sex identification theory." Whiting's (129) paper on the relationships among polygyny, the post-partum sex taboo, and male puberty rites stimulated two streams of inquiry into reproductive rituals and polygyny.

Reproductive Rituals

Reproductive rituals have long been a focus of gender-identity theories: A series of studies examine male and female initiations at puberty (9, 20, 91, 111, 112, 132), adolescent sexual behavior (12, 13), menstrual taboos (91), couvade (69), and post-partum sex taboos (109, 129). Gender-identity theory predicts that male initiations will occur when adult gender roles are strongly differentiated and yet mother-child households foster an early identification of the boy with his mother; here transformation to a secure masculine identity is required at puberty. Munroe et al (69, 70) extend the theory by showing that conditions fostering male cross-sex identity, in the absence of strongly differentiated adult roles, predict the couvade, defensive masculinity, and the absence of initiations.

Paige & Paige (91) suggest an alternative to the Whiting theory of initiations, based on the politics of fraternal interest groups. Their primary hypothesis is that "ritual is a form of political bargaining that takes place in the absence of more formal mechanisms for asserting claims and adjudicating disputes . . ." (91, p. 69). In this analysis, reproductive rituals such as menarchal rites, male circumcision, couvade, and menstrual restrictions are varying ways men assert claims over women and children. Variation in the form of control by men is dependent upon the quality of the society's resource base and the size of the fraternal interest groups. Paige & Paige find strong relationships between their two independent variables and four kinds of reproductive rituals. The greatest strength of this study is in the introduction of political variables to the cross-societal analysis of cultural phenomena, especially in formulating a new analysis theory of circumcision ceremonies.

Zelman (140) sees sex differences as minimized in rituals of male reproductive involvement and maximized in those of female pollution-avoidance. The former are associated with high female subsistence contributions, matrilineal or cognatic kinship, and low societal complexity, while the latter are associated with low female subsistence contributions, patrilineal kinship, and women being blamed for childlessness. Her findings complement Paige & Paige's to the effect that birth practices are negatively associated with quality of the resource base and strength of fraternal interest groups, and that menstrual segregation is associated with husband dominance and an unstable resource base.

Households and Polygyny

A number of cross-cultural studies have been concerned with polygyny. These have focused on two alternative explanations—economic explanations based on plow agriculture and female subsistence contributions, and explanations based on warfare and male reproductive strategies.

Although it is common to hypothesize that polygyny is a consequence of high female economic contributions, studies of the relationship between these two variables find it to be weak, and to hold true only for agricultural and gathering societies (23, 53, 62, 88, 122). Many scholars have noted the strong negative correlation between plow agriculture and polygyny (15, 23, 47, 48). Two explanations are offered: Boserup's (15), based on the idea that polygyny occurs in long-fallow agricultural societies with communal land tenure and land for expansion; and Goody's (47, 48) view of polygyny as a reproductive rather than economic strategy, associated with unilineal inheritance systems.

Related to Goody's view is the sociobiological view of polygyny as a reproductive strategy by which males maximize offspring while minimizing paternal investment in each child (2, 36, 52). Supporting this hypothesis is a negative correlation between polygyny and father-child proximity (49). Hartung (50–52), however, notes that every successful son has a mother, and every mother with highly reproductively successful sons has a large number of grandchildren. "Therefore, given a family with considerable resources, one should expect mother and son to side against father" over whether resources are conserved and passed on to the son so he can gain multiple mates, or are spent by the father to gain additional mates for himself (52, p. 5). Bridewealth and patrilineal inheritance are predicted by polygyny in that "Ancestors would maximize the reproductive-success value of their transferable wealth by leaving it to the offspring of the sex which has the highest probability of having the largest positive effect" (50, pp. 607–609).

Whiting & Whiting (135) link husband-wife aloofness, indexed by mother-child households and general nonsororal polygyny, to mutually reinforcing psychogenic and sociogenic explanations of warfare. Broude (18, 19) elaborates on notions of husband/wife aloofness and intimacy, and tests them on a

cross-cultural data set for sexual attitudes and practices. In arguing against Whiting's (129) earlier theory of the relationship between polygyny and the postpartum sex taboo, Ember (40) proposes that polygyny is a consequence of high male mortality in warfare and that age differences between husband and wife and internal warfare with high male mortality interact to cause polygyny (41). Murdock (72) emphasized the importance of warfare, slavery, and capture of women in explaining both polygyny and patrilocal residence.

White et al (124) provide codes for a set of 10 polygyny variables. They recognize that polygyny is not a unitary phenomenon, distinguishing between (a) the most common form of Old World polygyny, in which wives are not related to each other, and each adult lives aloof in a separate house in a polygynous compound (135); and (b) the most common form of New World polygyny, in which wives are related to each other, and the entire polygynous family lives intimately in a single house. Other codes include frequency of polygynous marriages and Spencer's (116) measure of social differentiation.

Integrating explanations for polygyny based on economics, ecology, fraternal interest groups, and warfare, White et al (123) find significant positive effects of fraternal interest groups, warfare for plunder or capture of women, and optimal climate zone upon polygyny. They find significant negative effects on polygyny for the plow and dependence on fishing.

Gender Beliefs and Behavior

Female status is hypothesized to be related to sexual division of labor (108), warfare (29), and to social-structural variables, such as the effects of matrilineal and patrilineal kin groups. We feel that a comprehensive cross-cultural study of female status must integrate economic, ecological, social-structural, and warfare variables. Recent advances in the cross-cultural study of gender have begun to do so.

Schlegel (110) codes a sample of 66 matrilineal societies for more than 30 social-structural variables, including dominance of husband, brother, or neither; control of property; co-wife jealousy; and residence. Schlegel finds that female autonomy is associated with the case where neither husband nor brother is dominant. She then examines the relationship between these dimensions, form of cousin marriage, and form of incest taboo.

Whyte (136) provides a valuable data set for the study of female status, covering a number of domains that are underrepresented in purely anthropological studies. He begins with the premise that female status is multi-dimensional; this premise and his systematic testing of hypotheses in the literature lead to his carefully coding many different features of female status. Major theoretical arenas in his analysis include the effects on female status of agricultural intensification, hunting, herding, warfare, matrilineality, the state, private property, societal complexity, classical religions, sex ratio,

female control over property, female work groups, female subsistence contributions, female control over the fruits of labor, and monogamy.

The great value of Whyte's book lies in the careful collection of data and the broad formulation of hypotheses. The author determines the frequencies of the dependent variables and analyzes these variables into nine scales. He is convincing in his argument that female status is multidimensional and that there is not a single pattern of male dominance. However, Whyte's correlational analysis finds only limited support for his hypotheses; stronger results might have been obtained with the use of more powerful multivariate models.

B. Whiting's (127) hypothesis that male heterosexual fears and violence are psychologically generated by cross-sex identity and mother-child sleeping arrangements has been further explored and substantiated in recent research (38, 60).

Sanday (108) examines female power and authority, male dominance, sexual division of labor, creation myths, and sexual segregation in a study of 156 societies from the standard cross-cultural sample. Her study is unique in its explicit emphasis on culture and in its emphasis on ecological stress, migration, colonialism, and other forms of cultural disruption as factors involved in changes in female power and authority—changes that often have negative consequences for women. Sanday's book is a blend of cultural and historical analysis with cross-societal analysis, providing case-study material for about 45 societies. Such combination of cross-cultural surveys with in-depth cultural analysis of a subset of cases offers one way to improve cross-cultural analysis. However, in this book Sanday underanalyzes quantitative data. For example, she assumes that, in the absence of major societal disruptions, gender scripts are highly conservative; but she does not examine this assumption with statistical or historical tests.

Expressive Behavior

The notion that gender scripts are culturally conservative, barring major disruptions, is related to other findings about expressive behavior. Murdock (77) finds that beliefs about illness distribute geographically in continent-wide patches. He further finds that systems of economic, social, and sexual stratification and related subsistence features predict witchcraft beliefs, sorcery, and beliefs about spirit aggression. Similar historical and functional associations emerge in Winkelman's (137, 138) study of magico-religious practitioners. Shamans are predicted by food collecting; priests and shaman-healers by food production; healers and purported malevolent practitioners by political stratification; diviners and witches by social classes.

A series of studies on song and dance styles by Lomax & Arensberg (66) and Ericson (43, 44) produce striking associations with technological and social complexity, as well as strong regional and historical clusters.

DISCUSSION

We have emphasized three basic ideas—the strength of the cross-cultural method in studying connections among societies; our new ability to study systems of variables and to obtain cumulative research findings; and the need for a historical, or longitudinal, framework for doing such studies. These ideas can be divided into subthemes:

1. Galton's problem can be solved by incorporating data about linkages among societies into statistical models.
2. Recent studies have turned more to process, and to historical data, taking the first step toward putting time back into cross-cultural analysis. A necessary second step is to code a cross-cultural sample for several points in time.
3. There is much to recommend an approach that would integrate macro-level data about whole societies with individual-level data on such topics as variation in cultural form by social stratum, or gender differences in belief systems.
4. The incorporation of multivariate techniques into cross-cultural analyses has greatly increased the power of those analyses.
5. Using a standardized cross-cultural sample allows for the cumulation of separate studies into a single data base that at present contains more than 900 variables (10, 118).
6. A useful agenda for the future would be to develop a replication sample for the standard cross-cultural sample. This should be combined with upgrading the number of societies in regions that are now undersampled.

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