includes the relations "OBJECT, ROLL, ROCK," "TIME, ROLL, PAST," and "PATH, ROLL, DOWN THE MOUNTAIN."

The three systems attack many of the same problems. For example, all are concerned with economy of storage. Kintsch's treatment of this problem is the most detailed. He proposes a set of deletion rules for removing redundant information from the memory store and a parallel set of inference rules which will generate the deleted information (and presumably much more). Among Kintsch's deletion rules is one that has the effect of removing the last of the following three sentences from memory:

A collie is a dog.
A dog is an animal.
A collie is an animal.

A second rule has the effect of changing sentences such as

Poodles, setters, and collies bark.
Poodles, setters, and collies are dogs.

into

Dogs bark.
Poodles, setters, and collies are dogs.

This second rule of Kintsch's appears to encompass the treatment of this problem by the other theorists, although they would likely hold that the rule operates by preventing information from entering memory rather than by removing it from memory.

The various approaches differ from one another in important ways. For example, Kintsch defines as semantically acceptable those propositions that can be generated from memory by the inference rule. He treats metaphors as semantically unacceptable propositions to which a special set of analogy rules apply. In the view of Collins and Quillian, however, "there is a continuum from semantic acceptability to metaphor to anomally," so that it is appropriate to deal with acceptability and metaphor by a single process rather than by two processes.

None of the three approaches has yet reached a sufficient state of development to allow testing of more than a small part of its full capability. All are rich in ideas. In the next few years, experience in implementing them and in comparing the implementations to human behavior should yield a great deal of insight into the nature of human memory.

In the final contribution to the volume, Tulving proposes an extremely interesting distinction between memory processes that are semantic and those that are episodic. He defines episodic memory as a highly autobiographical process which records personal experiences in spatial and temporal relation to other such experiences. Such items of information as "Before I went to the grocery store, I met George in the bank" and "The second item on the list was 'FAP' " would be recorded in episodic memory. Semantic memory is "the memory necessary for the use of language. It is a mental thesaurus, organized knowledge a person possesses about words and other verbal symbols, their meanings and referents, about relations among them, and about rules, formulas, and algorithms for the manipulation of these symbols, concepts, and relations." Such items of information as " 'DO' is a verb," "All birds have wings," and "Two plus two is four" would be recorded in semantic memory. He notes that "laboratory studies of human memory and verbal learning have almost exclusively been concerned with phenomena of episodic memory."

Tulving says, "If it is true that past research in human learning and memory has been concerned primarily with episodic memory, and if it is true that classroom learning has little to do with students' remembering personally experienced events, then it is not surprising that empirical facts and theoretical ideas originating in verbal learning and human memory laboratories have little bearing on theory and practice of acquisition of knowledge." The exciting possibility is that with the advent of studies of semantic memory, psychologists are turning to topics that will be rich in implications beyond the laboratory.

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Power in the Domestic Sphere

Male Dominance and Female Autonomy. Domestic Authority in Matrilineal Societies. ALICE SCHLEGEL. HRAF Press, New Haven, Conn., 1972. xvii, 206 pp. Cloth, $8; paper, $6.

Societies with matrilineal descent systems have long fascinated Europeans. Perhaps the most puzzling, and interesting, fact of matrilineal organizations is that authority over material resources and over persons (especially women and children) is split between a man and his sister's husband (or a man and his wife's brother). Curiously enough, and contrary to the matriarchal evolutionary myth, these arrangements involve allocating authority among men, not among women. Although women control access to lines of descent, nowhere do they exercise primary authority over the descent group. Recently, Schneider, Gough, and others have discussed the characteristics of matrilineal systems in a more comparative framework. Particular emphasis has been placed on examining the structural consequences of the distribution of authority.

Schlegel's book is a cross-cultural study of various solutions to this "matrilineal puzzle" (as Audrey Richards called it). Schlegel differentiates between domestic groups and descent groups, and chooses to confine her inquiry to the domestic sphere. She concludes that there are three basic forms of adult male dominance: dominant husband, dominant brother (wife's brother), and balanced dominance between husband and brother. ("Brother" stands for "male consanguines in the woman's descent groups.") A further finding is that the total amount of male authority over women is less in the societies where affine and consanguine males have a balance of power than in either of the other two. An obvious conclusion, which Schlegel doesn't make explicit, is that women win power when their men split theirs and that for females, as well as males, the rule of divide and prevail seems to operate.

There are relationships between authority and the forms and variants of preferential cross-cousin marriage, as well as strengths of incest prohibition within the nuclear family. Husband-dominant societies are associated with matrilateral cross-cousin marriage and with father-daughter incest's being regarded as worse than the brother-sister type. Brother's dominance is associated with patrilateral cross-cousin marriage and with brother-sister incest's being regarded as worse.

Sampling problems, data quality control, Galton's problem, and coding reliability are all adequately handled and, more important, adequately reported in the book. Especially useful and unusual is the complete list of page references for each coding.

After a long series of 2×2 correlations of the authority type with 40 other variables by means of χ^2, Schlegel concludes that there are strong

associations between many of these variables and particular values of the authority scale. If these are complex and powerful syndromes, the other variables should correlate with each other as well as with the authority variable. Schlegel purports to have demonstrated this by means of a factor analysis. This is the least convincing part of the book, and it remains to be tested adequately.

Schlegel has not generated an operational definition of authority, her central variable, in spite of a section of the coding manual devoted to it (Appendix A, pp. 145–47). It is therefore impossible to determine the degree to which authority was measured independently of the other variables. For example, who punishes a woman's adultery, husband or brother, is clearly dependent on who is the recipient of jural authority over her. Thus, if husband is dominant, he is the sanctioner, which cannot be said to be a variable independently associated with "husband dominance" but is part of the definition of it.

Perhaps the most serious unresolved methodological difficulty in cross-cultural research is what has been called the measurement problem. The difficulty is to discover measurement criteria that apply with equal validity to several different cultural systems. Anthropological comparativists have tended to pay relatively little attention to the problem, and this book is consistent with tradition. For example, the measures of strength of incest prohibition are naive and ambiguous, using mythical materials (notorious for their use of symbolic structural reversal) and classificatory siblings who may be outsiders to the domestic group.

Schlegel has made a lot of ad hoc decisions in doing her research. To take one instance, she finds that control over property is the variable "most clearly and strongly associated with domestic group authority" (p. 86). In order to get such a strong relationship she has collapsed seven categories of property control into three and dropped three cases from the sample. It is to be hoped that, as anthropology matures, such decisions will be generated by theory. The results of this fishing expedition may be worth having, but they would have been of much greater value if generated from theory.

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New Journals Received

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Biomaterials, Medical Devices, and Artificial Organs. An International Journal. Vol. 1, No. 1, March 1973. Four issues per volume. Editor: T. F. Yen. Marcel Dekker, Inc., 95 Madison Ave., New York, N.Y. Vol. 1, $35; to individual professionals and students, $17.50.

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