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CP 20-136/p
first approximation

LITHIC ANALYSIS AND SYSTEMATICS IN CONTEMPORARY ARCHAEOLOGY

Outline (second draft)
Ruthann Knudson - 26 May 79

I. INTRODUCTION [3,000 words]

- a. Role of lithic analysis within archaeology today; its use as the basis for development of highly abstract inferences about prehistoric adaptation, social patterns, cultural processes
- b. Additional role: basis for understanding the history of technologies, the uses of materials within prehistory
- c. Development of ethnoarchaeology, experimental models applicable to lithic analysis
- d. Use of automatic data processing, sophisticated computers and software
- e. Need for an integrated analytical model, appropriate for the questions being asked and the analytical techniques being used

II. HISTORY OF LITHIC STUDIES: THE TRADITIONAL FRAMEWORKS (summarized by eras) [12,000 words] (need more of the Asian, inc. Japanese, here)

- a. Pre-1885 (Skertchly, Stevens, Evans, Boucher de Perthes)
- b. 1885-1919 (Wilson, Holmes, Pfeiffer, Warren, Bardon and Bouyssonie, Breuil Mortillet, Comont)
- c. 1919-1945 (Ishi, Pond, Barnes, Bryan, Cheynier, Peyrony, Vaufrey)
- d. 1945-1964 (Bordes, Tixier, Wormington, Witthoft, Leroi-Gourhan, Mac Burney, de Lumley, Heinzelin de Braucourt, Bohmers, de Sonnevile-Bordes, Kleindienst, Cole, Isaac, J.D. Clark)
- e. 1964-1972 (Les Eyzies; Semenov, Crabtree, Brezillon, J. P. White, Sackett, Wilmsen, Movius, Montet-White, Binfords, B.F. Leach, Frison)
- f. 1972-present (*Lithic Technology, Flintknappers' Exchange*, Marks, Tringham, Odell, Keeley, Thomas, Muto, Sheets, Hayden, Kamminga, Gould, Phagan, Stothert, Johnson, Knudson, Ahler, Shafer, Callahan, etc.)

III. A BEHAVIORAL THEORETICAL FRAMEWORK [8,500 words]

- a. Relationship of artifacts to the analysis of cultural/social processes; the need for middle range theory
- b. Classification and systematics as applied to flaked stone tools (Rouse; Phillips, Ford, Griffin; Wheat, Gifford, Wasley; Spaulding; Sneath and Sokal; Dunnell; other references from Europe, Africa especially)
- c. Concept of behavioral systems within lithic studies: production, use, and design; holistic vs. partitive analysis
- d. The significance of the archaeological context

IV. METHODS AND TECHNIQUES FOR OUTLINE LITHIC SYSTEMS (the data available, how to use them) [17,000 words]

- a. Production systems (debitage, tools)
 - ethnographic models: Ishi, Gould, Hayden, Kamminga, Tom Miller, Bordaz, White, Gallagher
 - experimental knappers: Muto, Phagan, Bradley, Callahan, Crabtree, Leakey, Bordes, Tixier, Newcomer, Ahler, Shafer, Flenniken
 - experimental engineers: Warren, Muller-Beck, Faulkner, Speth, Tsirk, Cottrell
 - experimental annealers: Crabtree, Mandeville, Purdy, Flenniken, Leach

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--systematists: Bordes, Tixier, Heinzelin de Braucourt, Van Riet Lowe, Bohmers, Cheynier, Holmes, D. Anderson, Crabtree, Collins, Knudson, Muto, Stothert, Ahler, Katz, Judge, Wheat, Callahan, etc.
 --petrologists: Goodman, Bryan, Wilson, Ericson, Knudson, Luedtke

b. Use systems (tools)

--ethnographic models (as above)
 --experimenters: Tringham, Callahan, Odell, Keeley, Keller, Sonnenfeld, Lawrence, T. Hester, Hayden, Kamminga, Frison, Stanford, Miller, Johnson
 --analysts: Callahan, Tringham, Odell, Keeley, Ahler, Knudson, Phillipsons, Sheets, Brose, Hayden, Frison, Shafer

c. Design systems

--Pye, H. Stewart, Knobler (on the concept of style or design)
 --Sackett, Kleindienst on style in archaeology
 --individual and style: Gunn, Knudson
 --methanical analyses of form: Calabrese, Thomas and Bettinger, Holmer, Gunn

V. THEORY, METHODS, AND TECHNIQUES OF BEHAVIORAL LITHIC ANALYSIS [4000 words]

- a. a general discussion of the relationship of this approach to archaeological problem solving
- b. systemic variability over time; organizational and distributional variability within a diachronic framework

VI. CASE STUDIES OF ARCHAEOLOGICAL LITHIC PROBLEMS [8,500 words]

- a. North American stylized projectile points (Paleo-Indian)
- b. Tool use [function] in the Paleolithic [Bordes/Binford/Semenov]
- c. Bipolar tools/debitage
- d. North American "pre-Clovis" and concepts of technological complexity
- e. Australian horsehoof cores
- f. Large assemblage analysis (Africa, southern Europe, American Southwest)

VII. SUMMARY: LITHIC ANALYSIS AND SYSTEMATICS IN CONTEMPORARY ARCHAEOLOGY [3,000 words]

REFERENCES CITED

APPENDIX:

- A. Glossary
- B. Tools and facilities used in lithic analysis
- C. Suggested attribute lists

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general estimate of 56,000 words, or approximately 200 pages of text, plus illustrations for total of 250 pages plus references and appendix; perhaps 325 pages total?