Household Possessions and Wealth in Agrarian States: Implications for Archaeology

MICHAEL E. SMITH

Department of Sociology and Anthropology, Loyola University of Chicago, 6525 N. Sheridan Road, Chicago, Illinois 60626

Received October 28, 1985

This paper deals with the problem of measuring household wealth from domestic artifact remains. After an archaeologically useful definition and classification of wealth is presented, quantitative anthropological, sociological, and historical analyses demonstrating a strong association between household possessions and wealth are reviewed. Then, ethnographic and historical data on different functional categories of household goods are examined in order to assess their relative ability to predict wealth. Once the nature of the relationship between household possessions and wealth in the systemic context is specified, methodological problems influencing the detection of this relationship in the archaeological context are treated. It is concluded that household possessions are quite good wealth indicators in the systemic context, and that proper attention to a number of methodological issues allows archaeologists to take advantage of this relationship to measure household wealth in past societies. © 1987 Academic Press, Inc.

INTRODUCTION

One of the most important recent developments in the archaeological study of agrarian societies is the increasing attention devoted to the household as a unit of social analysis. The emergence of “household archaeology” as an explicit substantive and methodological focus within the discipline (e.g., Wilk and Rathje 1982; Tourtellot 1983) is closely related to an increase in attention to households in related fields like sociocultural anthropology and social history (e.g., Yanagisako 1979; Netting et al. 1984). Analysis at the level of the household has a number of advantages in studies of social and economic organization. First, the household is the basic unit of production and consumption in agrarian societies, and thus many of the activities involved in adaptation to the natural and social environment take place at the household level. Second, a focus on households usually permits a consideration of the entire range of social variation within a given society, since households can be selected from various economic classes, residential areas, occupational groups,
and so on. Third, many large-scale social, political, and economic institutions and processes have impacts at the household level, and the study of households allows the researcher to address such larger patterns through their expression in a controlled social setting.

In the analysis of households in agrarian societies, one of the most significant variables for many kinds of studies is household wealth. Wealth can vary significantly across regions, across politicoeconomic systems, and between sectors of particular large politicoeconomic systems. More important for many anthropological and archaeological problems, however, is the variation in household wealth within communities and within societies. At the household level, wealth is closely related to a number of significant social and demographic variables, including family size and structure, occupations of household members, and domestic developmental cycle (e.g., Yanagisako 1979; Netting et al. 1984). Investigations of household wealth can therefore lead to more adequate models of local and regional social organization and of the local impact of higher-level institutions like state governments, market systems, and the like. Furthermore, the analysis of household wealth can contribute directly to the study of the social and behavioral implications of change through time in both low-level (e.g., demographic) and high-level (e.g., political or economic) processes.

As archaeologists turn increasingly to the analysis of households, the lack of a systematic approach to the material correlates of wealth is becoming obvious. Some progress has been made in using residential architecture to monitor household wealth, and studies of status patterning in mortuary contexts are clearly relevant (this work is reviewed below). However, one of the most promising lines of research has had almost no systematic treatment—the use of material possessions (household artifacts) to study wealth. This paper contributes to the task of building a methodology for the analysis of household wealth using portable artifacts. First, an archaeologically useful definition and classification of wealth are provided. Then a number of case studies are presented to establish firmly that household possessions do indeed measure wealth in agrarian states. The bulk of the paper is next devoted to a consideration of different functional classes of household items in terms of their ability to predict wealth in ethnographic, historical, and archaeological settings. Finally, some of the methodological problems associated with the analysis of wealth from archaeological artifacts are discussed. The overall conclusion of this paper is that household possessions clearly are good indicators of household wealth in ethnographic and historical settings, and that this relationship can be used archaeologically when the appropriate methods are applied.
Wealth: Definition and Classification

In a discussion of comparative social stratification, Haller (1970) points out that wealth is a difficult concept, particularly when comparisons are made among different economic systems. He defines wealth as "access to goods and services" (1970:475f), and notes that no single variable (like income, land holdings or possessions) is sufficient to adequately measure household or individual wealth. While this definition is intuitively appealing and has the advantage of linking the concept of wealth to anthropological definitions of social stratification, a more concrete approach is needed for archaeology. The standard definition of wealth used in the field of economics (e.g., "anything that has market value," Jones (1980: 15)) can be extended to non-western economies by changing "market value" to "value." For example, Schneider defines wealth as "the total of desirable (i.e., valuable) goods, both social and material, possessed by someone or existing in a community" (Schneider 1974:256). (Difficulties with the concept of value, whose operationalization is crucial for archaeological studies of wealth, are discussed in the methodology section below.)

Jones (1980) presents a useful classification of types of wealth based upon standard usage in economics, modified for historical data from an agrarian state, late colonial America. Her scheme is portrayed graphically in Fig. 1 (see Jones 1980:14–27). Financial wealth refers to the balance between financial claims and liabilities, while physical wealth includes land, goods, and human capital. Because of the impossibility of recovering data on financial wealth archaeologically, this category will not be considered further here. Jones' extensive tabulations of wealth levels demonstrates that in colonial America, physical wealth is entirely adequate for the analysis of total wealth patterns. Nonportable physical wealth comprises land and buildings; this is the largest single component of colonial wealth (55%; see Fig. 1). Portable physical wealth is divided into human (slaves, servants, and other types of dependent labor) and nonhuman forms. (Values for the former category are quite variable within the thirteen colonies. As Jones' tallies show, slaves and servants range from 33.6% of total physical wealth in the south to 0.4% in the northeast. The figures given in Fig. 1 and Table 1 represent mean values for all thirteen colonies.) Nonhuman portable physical wealth is the most relevant category for the present study, so a further breakdown of this type is provided in Table 1. The distinction between producers' and consumers' goods is generally useful, although it becomes problematic when

* See Notes section at end of paper for all footnotes.
production for use takes place within the context of the household. The separation of durable and perishables, an intuitive and theoretically important distinction, involves an arbitrary cutoff point; Jones (1980:92f) separates these categories on the basis of a normal useful life of 1 year.

In studying household wealth archaeologically, we are interested in finding methods to measure total household wealth using some subset of the types listed in Fig. 1 and Table 1. While control of land typically comprises the greatest proportion of total household wealth in agrarian societies, there is no direct archaeological measure of landholding. Remains of buildings, on the other hand, are typically recovered by archaeologists, and estimates of the value of residential structures is an important method of studying prehistoric household wealth (see discussion

**TABLE 1**

**Types of Nonhuman Portable Physical Wealth in Colonial America, 1774**

<table>
<thead>
<tr>
<th>Type</th>
<th>Value $^b$</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producers’ durable goods</td>
<td>31.7</td>
<td>A. Livestock&lt;br&gt;B. Farm equipment and implements&lt;br&gt;C. Nonagricultural producers’ capital&lt;br&gt;D. Domestic production equipment (textile, etc.)</td>
</tr>
<tr>
<td>Producers’ perishable goods</td>
<td>12.5</td>
<td>A. Crops&lt;br&gt;B. Producers’ materials (lumber, etc.)</td>
</tr>
<tr>
<td>Consumers’ durable goods</td>
<td>18.4</td>
<td>A. Clothing&lt;br&gt;B. Furniture&lt;br&gt;C. Other household equipment and implements</td>
</tr>
<tr>
<td>Consumers’ perishable goods</td>
<td>1.5</td>
<td>A. Foodstuffs&lt;br&gt;B. Other supplies (firewood, candles, etc.)</td>
</tr>
</tbody>
</table>

$^a$ Classification and data are from Jones (1980).

$^b$ Value figures represent the mean value per household (in pounds sterling) in the thirteen Colonies in 1774.
Human wealth, defined as the access to the labor of non-household members, can be a highly significant component of total wealth in agrarian states (Jones 1980; Polanyi 1968:93). While the indirect benefits of such labor service may leave physical evidence (as in the construction of larger houses for the wealthy), the nature of social control involved is generally not recoverable archaeologically. The types of nonhuman portable physical wealth recovered in the archaeological record depend primarily upon factors of preservation (durables will be favored over perishables) and location (the locations of production, consumption, and deposition activities). Thus, consumers' goods will typically be recovered in household contexts (in and around the house and in contexts of household refuse), while producers' goods may be present in either household contexts or in association with separate buildings away from the residence.

Archaeological Approaches to Stratification and Wealth

Archaeologists have traditionally approached the analysis of prehistoric stratification and wealth differentials with three kinds of data: residential architecture, burials, and household artifacts (see Haviland 1981; Rathje 1983).

(1) Residential architecture. This is probably the strongest and most consistent expression of wealth levels in agrarian states (Blanton 1984). Such societies exhibit a great range of variation in the size and quality of housing, and these factors relate directly to the level of a household's access to goods and services (see Yang 1945:37–41; Lewis 1951:178ff; Mack 1951; Blake 1981; Wilk 1983; McGuire 1983; Abrams 1984).

(2) Burials. Burials represent the class of archaeological remains that have been most extensively analyzed in terms of wealth and status differentials. Mortuary studies can shed considerable light on patterns of social stratification in two realms: contextual and osteological. Contextual variables like burial form, orientation, and associated grave goods clearly relate to sociocultural variability in prehistoric populations (e.g., Chapman et al. 1981; Bartel 1982), while osteological variables reflect patterns of social stratification and wealth variation to the extent that nutritional and health factors are affected by wealth in agrarian states. Ethnographic sources reveal a strong correlation between dietary quality and wealth in state societies (e.g., Lewis 1951:187ff; DeWalt 1983; see discussion below), and these differences often produce widespread clinical malnutrition in the lower classes (e.g., DeWalt 1983). For archaeological examples of this approach, see Haviland (1967), Klepinger (1984), and Huss-Ashmore et al. (1982).

(3) Household artifacts. In comparison with architecture and burials,
household artifacts offer a number of advantages and disadvantages for the archaeological study of wealth differentials. Their greatest advantage consists of the fact that numerous studies have demonstrated that the size and composition of household artifact inventories are strongly associated with wealth levels in both industrial and agrarian states (see below). This association stands in spite of the fact that the value of household possessions usually comprises only a small proportion of total household wealth (e.g., consumers' durables comprise an average of 9.1% of nonhuman physical wealth in Jones' (1980:103) sample of colonial households). Furthermore, several observers have noted that artifact inventories change more rapidly than architecture (Lewis 1973:259) or even furniture (Teller 1968) in response to changes in household situation. While this greater sensitivity may be a drawback in studies of wealth in that inventories are also highly responsive to change in nonwealth variables (e.g., household size and composition), it can be an advantage in fine-scale studies of household change where chronology is well controlled. Another advantage of household artifacts for studying wealth levels that should not be overlooked is their ubiquity and abundance in archaeological contexts. Artifacts from virtually any set of residence-related contexts (house-floors, kitchen middens, yard areas, discrete dumps, etc.) can be used to investigate wealth levels if appropriate methods are applied.

Against these advantages to the use of household artifacts in the study of social stratification are two serious disadvantages. First, while this paper demonstrates the strong association between a number of components of artifact inventories and wealth levels, inventories are also influenced by a series of other factors. For example, Schiffer et al (1981:83) list the following as the major determinants of the kinds and quantities of household goods cross-culturally: (1) stage in the domestic developmental cycle; (2) degree of residential stability; (3) time elapsed since the last change of residence; and (4) wealth or income. To these four factors must be added at least two more: (5) household size and composition, which are related to, though separate from, the first factor above; and (6) the occupations of household members and the presence and nature of specialized production/exchange activities in the residential area. The second serious disadvantage of household artifacts concerns the nature of archaeological formation processes. While household artifacts are quite strong predictors of wealth while in use (systemic context), the operation of a number of well-documented cultural formation processes virtually guarantees that some of the wealth indicators recovered through excavation (archaeological context) will be weaker predictors of wealth levels (see Schiffer (1976) on systemic vs archaeological context). These issues are discussed in the methodology section below.
DO HOUSEHOLD POSSESSIONS REFLECT WEALTH?
SOME EXAMPLES

Before turning to the analysis of how archaeologists can go about measuring wealth from household goods, it should be firmly established that household possessions in the systemic context do indeed monitor wealth in agrarian states. Four examples clearly demonstrating this relationship are presented in this section. These examples encompass a wide range of cultural contexts and social science approaches, all showing that household possessions are useful predictors of wealth in state-level societies. Additional empirical support of this finding is discussed in the remainder of the paper.³

(1) The first type of evidence supporting the association between possessions and wealth consists of three studies in very different cultural settings (Tahiti, Finland, and Mexico) that show how households conform to Guttman scales when scored on material goods and furnishings. The summary data are provided in Table 2. The fact that these household inventories conform to Guttman scales (i.e., if a given household has one of the listed items, then it also has all items listed below that item) merely indicates that there is a consistent hierarchical ordering of material possessions within each community. However, the addition of two other considerations permits the conclusions that these data reveal a strong association between household wealth and material possessions. First, the more restricted items (toward the top of each list) are generally more costly than are the more prevalent items; and second, these costly and restricted goods are highly valued in the three communities (Kay 1964; Pelto 1973; DeWalt 1979). Therefore access to valuable material goods is restricted and wealth variation is clearly and consistently expressed when the distributions of particular goods are examined. Ethnographic background data provided in the three studies indicate that the scores of households on the material possessions scales are associated with independent assessments of wealth. DeWalt (1979) is the most explicit about this; the material possession scale is shown to have statistically significant positive correlations with such variables as nonagricultural income and value of agricultural equipment. In a related study, DeWalt (1983:134) shows positive correlations of this scale with dietary quality variables including amount of meat and amount of total animal protein in the household diet.

(2) Another ethnographic example confirming the relationship between household wealth and material possessions is Oscar Lewis' study (1969, 1973) of possessions in the Panederos vecindad of Mexico City in the 1950s. Panaderos was a lower-class urban tenement inhabited by
### TABLE 2
#### GUTTMAN SCALE ANALYSES OF HOUSEHOLD POSSESSIONS

<table>
<thead>
<tr>
<th>Place and citation</th>
<th>Item</th>
<th>% of households with item</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Papeete, Tahiti (Kay 1964)</strong></td>
<td>1. Automobile</td>
<td>5.0</td>
</tr>
<tr>
<td>Number of households: 40</td>
<td>2. Refrigerator</td>
<td>22.5</td>
</tr>
<tr>
<td>Coefficient of reproducibility: .98</td>
<td>3. Kerosene or gas stove</td>
<td>27.5</td>
</tr>
<tr>
<td></td>
<td>4. Motorcycle</td>
<td>35.0</td>
</tr>
<tr>
<td></td>
<td>5. Radio</td>
<td>55.0</td>
</tr>
<tr>
<td></td>
<td>6. Bicycle</td>
<td>82.5</td>
</tr>
<tr>
<td></td>
<td>7. Primus stove</td>
<td>95.0</td>
</tr>
<tr>
<td><strong>B. Sevettijärvi, Finland (Pelto 1973)</strong></td>
<td>1. Television</td>
<td>5.8</td>
</tr>
<tr>
<td>Number of households: 69</td>
<td>2. Refrigerator</td>
<td>10.1</td>
</tr>
<tr>
<td>Coefficient of reproducibility: .96</td>
<td>3. Automobile</td>
<td>14.5</td>
</tr>
<tr>
<td></td>
<td>4. Gas/electricity for cooking and lighting</td>
<td>14.5</td>
</tr>
<tr>
<td></td>
<td>5. Oil heating</td>
<td>18.8</td>
</tr>
<tr>
<td></td>
<td>6. Gas/electricity for cooking or lighting</td>
<td>31.9</td>
</tr>
<tr>
<td></td>
<td>7. Washing machine</td>
<td>34.8</td>
</tr>
<tr>
<td></td>
<td>8. Telephone</td>
<td>47.1</td>
</tr>
<tr>
<td></td>
<td>9. Snowmobile</td>
<td>82.6</td>
</tr>
<tr>
<td></td>
<td>10. Chain saw</td>
<td>84.0</td>
</tr>
<tr>
<td><strong>C. Temazcalcingo, Mexico (DeWalt 1979)</strong></td>
<td>1. Television</td>
<td>12.3</td>
</tr>
<tr>
<td>Number of households: 57</td>
<td>2. Stove</td>
<td>15.8</td>
</tr>
<tr>
<td>Coefficient of reproducibility: .95</td>
<td>3. Wardrobe</td>
<td>24.6</td>
</tr>
<tr>
<td></td>
<td>4. Sewing machine</td>
<td>24.6</td>
</tr>
<tr>
<td></td>
<td>5. Raised hearth or stove</td>
<td>36.8</td>
</tr>
<tr>
<td></td>
<td>6. Bed</td>
<td>63.2</td>
</tr>
<tr>
<td></td>
<td>7. Radio</td>
<td>75.4</td>
</tr>
<tr>
<td></td>
<td>8. Iron</td>
<td>93.0</td>
</tr>
</tbody>
</table>

Fourteen families living under conditions of extreme poverty. Lewis did a complete inventory of all material possessions and assigned a monetary value to each. A summary of this data, broken down by the material categories employed by Lewis, is given in Table 3. It is clear that even within a small segment of the urban lower class there is considerable variation in the monetary value of household possessions; household totals vary from $119.26 to $936.78 (expressed in dollars). Lewis (1973:275) indicates that these values are associated with other wealth-related factors like income (see also Lewis (1970)). The usefulness of individual categories of goods for assessing overall household wealth is also indicated in Table 3; these data are discussed more fully below. For the present, the major implication of the data in Table 3 is that household
## Table 3

**Household Possessions and Wealth in a Mexico City Tenement**

<table>
<thead>
<tr>
<th>Types of possession</th>
<th>Total value, all 14 households</th>
<th>Mean value per household</th>
<th>2 top and 2 bottom extreme households</th>
<th>Correlation* with household totals</th>
<th>Use-life</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dollars</td>
<td>%</td>
<td></td>
<td>Wealthy</td>
<td>Poor</td>
</tr>
<tr>
<td>Household totals</td>
<td>4114d</td>
<td>100.0</td>
<td>294</td>
<td>721</td>
<td>120</td>
</tr>
<tr>
<td>Furniture</td>
<td>1375</td>
<td>33.4</td>
<td>98</td>
<td>318</td>
<td>19</td>
</tr>
<tr>
<td>Clothing</td>
<td>1127</td>
<td>27.4</td>
<td>81</td>
<td>114</td>
<td>26</td>
</tr>
<tr>
<td>Tools</td>
<td>327</td>
<td>7.9</td>
<td>23</td>
<td>103</td>
<td>3</td>
</tr>
<tr>
<td>Household equipment</td>
<td>294</td>
<td>7.1</td>
<td>21</td>
<td>24</td>
<td>9</td>
</tr>
<tr>
<td>Bedding</td>
<td>279</td>
<td>6.8</td>
<td>20</td>
<td>41</td>
<td>12</td>
</tr>
<tr>
<td>Kitchen utensils</td>
<td>230</td>
<td>5.6</td>
<td>16</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td>Jewelry</td>
<td>126</td>
<td>3.1</td>
<td>9</td>
<td>30</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Toys</td>
<td>122</td>
<td>3.0</td>
<td>9</td>
<td>44</td>
<td>0</td>
</tr>
<tr>
<td>Religious items</td>
<td>108</td>
<td>2.6</td>
<td>8</td>
<td>13</td>
<td>35</td>
</tr>
<tr>
<td>Ornaments</td>
<td>92</td>
<td>2.2</td>
<td>7</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Animals</td>
<td>16</td>
<td>0.4</td>
<td>1</td>
<td>&lt;1</td>
<td>0</td>
</tr>
<tr>
<td>Plants</td>
<td>10</td>
<td>0.3</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Medicine</td>
<td>8</td>
<td>0.2</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>1</td>
</tr>
</tbody>
</table>

*Data are taken from Lewis (1973).*  
*Correlations are Pearson's r.*  
*Use-life represents the mean length of possession (in years) for items of each category.*  
*All figures are in U.S. dollars as presented by Lewis (1973).*
wealth differences are clearly expressed in the value of material possessions found in the dwelling place.

(3) A third set of examples of the positive association between wealth and household possessions consists of several studies done in the United States in the 1930s through 1950s by sociologists. These investigators were looking for a quick and easy method to measure “socioeconomic status” in order to study the relationship between this factor and other variables of interest. Direct measurement of status was difficult and time consuming, involving a combination of objective scales (like income, occupation, or education) and subjective judgments. It was found that scales based upon the material culture of the dwelling effectively measured socioeconomic status or “level of living” and could thus be employed as a substitute measure in their studies. This finding was made independently by Chapin (1935) in an urban setting (see also Guttman (1942)) and by Sewell (1940) in a rural setting (see also Belcher and Sharp (1952)). Chapin was able to measure status solely on the basis of observations in urban living rooms (using variables like furniture type, floor coverings, and reading material), while Sewell used a wider range of observations (from house construction to plumbing to furniture) in his characterization of Oklahoma farm families. In these and later related studies (e.g., Chapman 1955; Laumann and House 1970; Belcher 1972), household possessions form an important constituent of the status scales, and in all cases the material scales are shown to correlate highly with income and other wealth-related measures.

(4) A final example of the ability of household possessions to monitor total wealth is provided by Jones’ (1980) massive study of colonial American wealth in 1774. The data presented in Table 4 here indicate that when various social categories are arranged in order from high to low wealth (total physical wealth), the corresponding mean values of consumers’ goods follow approximately the same order (the correlation between these sets of figures, ignoring the subclasses under merchants and farmers, is .885). Within the merchant and farmer categories, subclasses defined by wealth level (see footnote b to Table 4) also exhibit this relationship. In summary, these data suggest that the value of a household’s consumers’ goods is a good predictor of a household’s total physical wealth. (It should be noted that the aggregate nature of these data is not ideal for firmly establishing this conclusion. It would be useful to analyze the relationship between consumers’ goods and total wealth using the raw data as published in Jones (1978).)

There are several interesting characteristics of the data presented in Table 4. First, a decline occurs in the percentage of total wealth represented by consumers’ goods from low to high wealth categories. As
### HOUSEHOLD POSSESSIONS AND WEALTH

#### TABLE 4

**CONSUMERS' GOODS AND PHYSICAL WEALTH FOR SELECTED SOCIAL CATEGORIES IN COLONIAL AMERICA, 1774**

<table>
<thead>
<tr>
<th>Social category</th>
<th>Total physical wealth</th>
<th>Consumers' goods</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esquires, gentlemen, officers</td>
<td>572.4</td>
<td>40.6</td>
<td>6.5</td>
</tr>
<tr>
<td>All merchants</td>
<td>497.1</td>
<td>64.9</td>
<td>11.9</td>
</tr>
<tr>
<td>High-wealth(^b)</td>
<td>(797.7)</td>
<td>(83.7)</td>
<td>(9.2)</td>
</tr>
<tr>
<td>Middle-wealth</td>
<td>(235.9)</td>
<td>(42.4)</td>
<td>(18.9)</td>
</tr>
<tr>
<td>Professionals</td>
<td>341.0</td>
<td>35.2</td>
<td>9.0</td>
</tr>
<tr>
<td>All farmers(^c)</td>
<td>262.3</td>
<td>17.5</td>
<td>6.5</td>
</tr>
<tr>
<td>High-wealth</td>
<td>(676.3)</td>
<td>(31.4)</td>
<td>(4.6)</td>
</tr>
<tr>
<td>Middle-wealth</td>
<td>(171.6)</td>
<td>(15.9)</td>
<td>(9.2)</td>
</tr>
<tr>
<td>Low-wealth</td>
<td>(34.5)</td>
<td>(8.2)</td>
<td>(23.2)</td>
</tr>
<tr>
<td>Shopkeepers, innkeepers</td>
<td>204.3</td>
<td>26.2</td>
<td>12.3</td>
</tr>
<tr>
<td>Artisans</td>
<td>122.5</td>
<td>13.5</td>
<td>11.6</td>
</tr>
<tr>
<td>Mariners, laborers</td>
<td>62.0</td>
<td>14.0</td>
<td>21.9</td>
</tr>
</tbody>
</table>

\(^a\) These data, representing mean household figures for all thirteen colonies, are from Jones (1980: Tables 7.5-7.31, pp. 224-247).

\(^b\) The merchant and farmer categories are subdivided into high-, middle-, and low-wealth groups on the basis of total physical wealth of: over 400 pounds, 100 to 400 pounds, and under 100 pounds, respectively.

\(^c\) The farmers category includes only full time farmers without significant nonagricultural income.

Jones (1980:207) points out, this pattern is similar to that described by Engel’s Law in which the percentage of income spent for food declines as income rises (see Douglas and Isherwood (1979:97) on Engel’s Law). The two categories which deviate from this pattern are merchants (whose consumers’ goods are a higher percentage of wealth than would be expected), and farmers (whose value tends to be lower than expected). A similar finding is reported by Hayden and Cannon (1984:190), who show that in contemporary highland Maya villages, increases in household income are invested differently by merchants and farmers. Merchants are more likely to invest in household items ("luxury items"), while farmers are more likely to invest in agricultural capital like land or livestock (see Douglas and Isherwood (1979:50) for discussion of wealth-related consumption differences between farmers and others in modern settings). Because of these patterns, archaeologists should attempt to determine the occupations of household members as part of any study of household wealth.

On the basis of these anthropological, sociological, and historical studies, it is clear that the number and type of possessions are strongly
associated with total household wealth in a variety of cultural settings. The task of the following section is to determine what kinds of household goods are the best predictors of wealth.\(^4\)

**TYPES OF GOODS THAT REFLECT WEALTH**

*Functional Classification*

The most useful approach to the classification of household possessions as wealth indicators is one based upon the function of material items. Different functional categories relate to wealth in different ways, and most historians and ethnographers dealing with wealth and material culture typically employ functional classifications (e.g., Jones 1980; Lewis 1973; Douglas and Isherwood 1979; see also South 1977:270ff). Because ceramics tend to be the most abundant class of artifact in agrarian societies, archaeological analyses of wealth often depend heavily upon ceramic data; archaeologists should thus base their studies on a functional classification of ceramic artifacts (see Hally 1986; Smith 1985).\(^5\) This paper employs a functional classification modified after that used by Lewis in his study of modern Mexican households (see Table 3 above).

1. **Furniture.** Numerous studies have demonstrated a strong positive association between household wealth and the quality and amount of furniture. In modern Mexico, furniture is one of the strongest predictors of wealth as shown by Lewis’ inventory analysis (1973; see Table 3 above) and DeWalt’s Guttman scale analysis (1979; see Table 2 above). Jones (1980:229) notes a clear association between furniture and wealth for colonial America, Chapin (1935:383ff), Guttman (1942), and Sewell (1940:40) employ items of furniture as wealth indicators in their sociological level-of-living scales, and Castro et al. (1981:413) discuss a cross-cultural relationship between furniture and wealth in Third World rural settings today. This clear role of furniture as a predictor of household wealth probably derives from a combination of utilitarian and symbolic factors. Furniture tends to be one of the most expensive categories of households goods (at least in rural or nonindustrial settings), and because it comprises a relatively high proportion of total physical wealth (see Table 3), it serves as a good indicator of total wealth, if only for numerical reasons. Furthermore, the semipublic context of much household furniture gives it a significant symbolic role in expressing wealth and status to nonhousehold members (the symbolic role of material items in relation to wealth is discussed with serving ware below).

In spite of the strong association between furniture and wealth in modern settings, there are three reasons why this category is not particu-
larly useful as an indicator of wealth in archaeological settings. First, most preindustrial furniture is made of perishable materials (primarily wood) which does not often survive in the archaeological record. Second, the high value and long use-life of many items of furniture (see Table 3) cause them to be curated, reused, and scavenged at a high rate (Schiffer et al. 1981), thus inhibiting their deposition into the archaeological record in direct association with their primary location of use. Third, prior to the modern era, most nonelite households in agrarian states simply had very little furniture in their homes (Braudel 1981:283ff), thereby limiting the usefulness of this category to wealth assessment within the elite class or to separation of elite from nonelite contexts.

2. **Clothing.** As in the case of furniture, clothing tends to form a relatively large component of total household wealth in many societies (27.4% of the value of household possessions in Panaderos—see Table 3 above; 20.9% of the value of consumers' durables in the thirteen American colonies—Jones (1980:103)), and it is positively associated with wealth (Lewis 1951:57, 1973; Jones 1980:330ff; Castro et al. 1981:413) for what are probably similar reasons. The extremely rare preservation of clothing in the archaeological record effectively rules it out as a useful indicator of household wealth, however.

3. **Tools and household equipment.** This category includes all utilitarian equipment and items found in household contexts except for food preparation and serving items (which are treated as separate categories below). Although Lewis (1973) found that tools (specialized production items) were one of the best indicators of household wealth in Panaderos (see Table 3 above), the use of such items in predicting household wealth under preindustrial conditions is problematic. Ethnographic studies show that a number of household items are good wealth indicators (e.g., televisions and radios, sewing machines, washing machines, etc.—see Table 2 above), but in all cases these are costly industrial items. Douglas and Isherwood (1979:95–113) discuss the role of such goods in relations to wealth and status in modern societies; however, it is difficult to imagine preindustrial equivalents of such items.

Four types of utilitarian goods may be distinguished: household maintenance items, tools used in domestic production for use, agricultural implements, and tools for specialized artisan production (for exchange).

1. **Household maintenance items** are the basic equipment needed for cleaning, repair, and maintenance. Because the need for these items is relatively constant across households, several archaeologists have suggested that they are not good wealth indicators (Hayden and Cannon 1984:40–95, 189; Drennan 1983).

2. **Tools used in domestic production for use**, like household maintenance items, have a widespread distribution and do not appear to have a
strong association with wealth in preindustrial settings. Cross-culturally, textile manufacture is one of the most common types of domestic production activity; in addition to textile production tools, archaeologists are likely to recover evidence for production of lithic, wood, and sometimes ceramic items for domestic consumption in household contexts. Elevated frequencies of such items might correlate with larger household size, which in turn is often associated with wealth (see above), but this is an unexplored and tenuous link. In highly stratified societies where nonelite households provide labor service and/or goods for the elite, there could easily be a negative association between the abundance of such domestic production tools and wealth (i.e., nonelite households with greater service/tax obligations would have evidence of a higher rate of domestic production).

3. Agricultural implements. Outside of modern settings where farmers have access to industrial farm equipment (see Castro et al., 1981:404), there is little information on the relationship between a household’s agricultural implements and its level of wealth. It appears unlikely that such items would be good wealth indicators.

4. Tools for specialized artisan production have a negative association with household wealth in many non-elite settings. Arnold (1985:171–198) reviews cross-cultural data revealing that in many parts of the world, pottery specialization in peasant households is related to land shortages and poverty, and potters in these societies tend to be of lower socioeconomic status than their farming neighbors. Cook (1982:74ff, 129ff) discusses this situation for peasant artisans in general and provides parallel data on specialized stoneworkers in rural Oaxaca, Mexico. Within an elite class, however, specialized production tools may have a positive association with wealth if there is a tendency for wealthier households to have attached craft specialists. In summary, tools and household equipment are not good wealth indicators, and two subcategories—tools used in domestic production for use and artisans’ tools—may have a negative association with household wealth in certain settings.

4. Food preparation items. Food preparation items reflect wealth to the extent that variations in diet and/or techniques of food preparation are associated with wealth level in a society. Numerous ethnographic and historical studies have demonstrated a strong correlation between dietary quality and wealth in agrarian state societies. For example, Lewis (1951:189) reports that in Tepoztlan, Mexico, wealthy households consume more food, a wider variety of foods, and consume desirable foods at a higher frequency than poor households. DeWalt (1983) finds a similar pattern in Temazcalcingo, Mexico, and provides detailed quantified data on diet and its relationship to a wide range of sociocultural variables (including household possessions—see discussion of Table 2 above). The
wealth-related differences in dietary quality (primarily the amount of protein and dietary diversity) are sufficient in this area to produce a situation of clinical undernutrition in poorer households (DeWalt 1983:115–120, 141–147). Castro et al. (1981:414–416) report cross-cultural data for the association of dietary quality and wealth; additional examples may be found in Yang (1945:22ff), Braudel (1981:183ff), and Otto (1977, 1984). As noted above, the most direct way to investigate this situation archaeologically is through osteological remains. However, wealth-related dietary differences are also reflected in household material culture inventories.

One way in which wealth-related dietary differences may be expressed materially is through distinctions in the type of cooking vessels employed for different foods. There is some evidence for this pattern from ethnographic studies (Lewis 1970:432; Sewell 1940:40), and Otto (1984:48, 60, 112) provides sketchy but suggestive archaeological and historical data from the Cannon's Point plantation. At Teotihuacan, where wealth- or status-related artifactual patterning has been explored in a preliminary fashion, there are suggestions of differential food preparation techniques (perhaps associated with dietary differences) between low- and intermediate/high-status residences on the basis of differences in the frequencies of San Martin Orange ware and plain ollas in surface collections of the Teotihuacan mapping project (Cowgill et al. 1984:166; Smith 1975:71–75). As archaeologists begin to associate specific ceramic types with specific food types through an increased concern with ceramic vessel function (see Hally 1986; Braun 1983), it will become clearer whether or not this sort of pattern will be of use for wealth analysis.

Within most ethnographically documented settings, however, the basic repertoire of food types and the cookware used to prepare them is relatively constant across households of different wealth levels (e.g., Lewis 1951:189, 1973:271f, Deal 1983), although there may be an association between the quality of workmanship of cookware and wealth. Wealth-related dietary differences tend to be expressed in the total quantity of food consumed and in the relative proportions of different food types, so archaeologists need to look more at quantitative artifact differences or at different methods of preparation for a basic food set. For example, Nelson (1981:121) found that the aggregate volumes of several functional ceramic categories in a highland Maya village are associated with several wealth-related variables, including amount of farmland planted and "social rank." A number of ethnographers have noted that in rural Mexico, wealthier households have raised cooking facilities while their poorer neighbors use the traditional three-stone hearth at floor level (see Table 2 above; Lewis 1951:183). A similar pattern may have characterized Classic Teotihuacan, where at least two types of cooking facilities have been identified: simple floor-level hearths and ceramic braziers known as
“three-prong burners” (Millon 1981:203). These braziers are statistically associated with intermediate- and high-status residences and are uncommon in low-status residences (Smith 1975:71–75), while the distribution of hearths has not been reported. It is quite possible that these two types of cooking facility may serve as wealth indicators for Teotihuacan residences.

Hayden and Cannon (1984:74, 81) document a situation in which food preparation items have a negative association with wealth. Metates (grindstones) in their sample have a weak negative correlation with income, which they interpret as due to “high income households either buying already ground maize or finding alternative mechanized means to grind their maize” (Hayden and Cannon 1984:81). Similarly, at Teotihuacan preliminary analyses indicate that manos and metates are less common in high-status houses than in low- or intermediate-status houses (Smith 1975:73–75). The most parsimonious behavioral interpretation would be that lower status households were responsible for grinding maize for the elite. As suggested for tools and household equipment above, the nature of labor service arrangements in stratified societies has important implications for the use of material items as wealth indicators. Conquest-period ethnohistoric documents from Morelos, Mexico, describe a situation where commoner women were responsible for grinding maize (and weaving textiles) for noble households, but they lived nearby and went to the elite house to do the work (Smith n.d.). In this case, evidence of such activity (manos and metates) would have a positive association with wealth (since elite households probably consumed more maize than commoner households). In summary, food preparation items may be good wealth indicators in many situations, but more comparative work is needed in this area. To the archaeologists’ benefit, many objects involved in food preparation (particularly storage and cooking vessels) are made of ceramics and stone in preindustrial settings, and their relatively low value makes them less susceptible to curation, scavenging, and other processes that hinder direct deposition into the archaeological record in association with their domestic context of use.

5. Serving ware. This category of items is a strong predictor of household wealth in many ethnographic and historical settings, and appears to represent the most useful class of archaeological artifact for assessing wealth. The conceptual framework for understanding the relationship of serving ware to wealth is provided by Douglas and Isherwood (1979) in their treatment of household consumption patterns. They focus on ways in which people use household goods to communicate information. One of the primary roles for such communication in nearly all societies is the conveyance of signals concerning wealth and status to individuals of other households. Serving ware has a relatively public domain compared
to other household items and is therefore a common vehicle for the communication of information (Wobst 1977:328–330); for this reason, serving items are likely to be used as "markers" (Douglas and Isherwood 1979:74–76) of wealth and status.

An important setting for the symbolic use of serving ware as a marker of wealth and status is the household consumption ritual, a social gathering within the context of the household that includes the consumption of food, drink, and other goods (Douglas and Isherwood 1979:114–127, 150ff). Household consumption rituals in modern United States society include dinner parties and cocktail parties; examples from other cultures include the Latin American family fiesta, cooperative work parties, and a host of culturally specific household social occasions associated with life-course rituals like baptisms, comings-of-age, weddings, funerals, and so on. These are all the occasion for non-household members to gather and be served food and drink in vessels that convey information on the wealth and status of the host household. Consumption rituals can become quite elaborate affairs, as in the case of the Northwest Coast potlatch or elite banquets in state-level societies.

According to Douglas and Isherwood (1979:114–170), within any given cultural setting, wealth and status are closely related to the frequency, scale, and nature of household consumption rituals. Wealthier households tend to (1) host more frequent rituals; (2) host more elaborate rituals with more guests and more food and drink; and (3) use serving ware that is more prestigious (i.e., more valuable and symbolically significant) for both periodic consumption rituals and everyday meals. The relationship of wealth to the frequency and scale of consumption rituals in rural settings is described briefly by Castro et al. (1981:414). Lewis remarks specifically on the material expression of consumption ritual scale in Tepoztlan as follows:

Wealthier families generally own enough plates, pots, glasses, spoons, chairs, etc. to be able to serve fiesta meals to a large number of people without having to borrow as do many other Tepoztlan families (Lewis 1951:183)

Thus wealth should be expressed in the number of serving vessels possessed by a household and in the value or costliness of those vessels.

Perhaps the best evidence of the strong positive association between the amount and value of serving vessels and household wealth comes from historical and archaeological studies of early American ceramics. During the eighteenth and nineteenth centuries, ceramic vessels were the primary type of serving vessel for all social classes. The tea ceremony was a ceramics-based household consumption ritual expressing wealth and status that was practiced by a large segment of the population, both rich and poor (South 1977:40–43, 231; Otto 1984:166). Household inven-
tories and archaeological studies show that as wealth increases: (1) households tend to have larger ceramic inventories; (2) a greater proportion of households possesses expensive wares (like Chinese porcelain) and they tend to own a greater number of such vessels; and (3) the value and size of tea sets increase (Teller 1968; Stone et al. 1973: South 1977:40-43; Otto 1984:64-69, 89f, 112, 166f; Miller 1980).

This strong association between serving ware and wealth is at the base of archaeologists' traditional use of elaborate painted pottery to infer wealth and status (e.g., Smith 1975:54, Bawden 1982:175), simply because painted vessels are often serving vessels. Fancy decorated ware is usually of considerably higher value than plain serving ware (in terms of both energetic and symbolic value—see discussion of value below), and a number of archaeologists have posited an association between such painted pottery and elite groups in ancient states (e.g., Smith and Heath-Smith 1980:31; Blanton et al. 1981:246ff). A complication arises, however, when valuable serving ware (or other goods) is not limited by law to the elite. Many less wealthy households may possess valuable items identical to those used by the elite, and thus it is not completely correct to refer to these goods as "elite wares" (see Friedl (1964) and Clark (1986) on lower-class emulation of elites). In such a situation, it should be possible to distinguish less wealthy from wealthier household inventories on two grounds: (1) wealthy households will have a higher frequency of valuable wares, and (2) their valuable serving pieces will exhibit more use-wear. The latter consideration derives from the observation that less wealthy households that own very valuable serving ware tend to use it much less often than do wealthy households who have the same ware (Miller 1980:13; Douglas and Isherwood 1979: passim). Studies of ceramic use-wear, a new and promising field, are thus directly relevant to investigations of household wealth that employ ceramic serving vessels (see Griffiths (1978:77) for an example). It should be noted that some attrition of systemic inventories must be expected for the most and least valuable kinds of serving vessels in many cases. Perishable items (e.g., wooden bowls, gourds) are often used as less valuable serving vessels (Jones 1980:330; Deal 1983:136ff), and the costliest wares will have higher rates of curation and scavenging than less valuable wares.

6. Religious items. In evaluating the relationship between household religious items and wealth, a distinction must be made between public and domestic religion. In agrarian states wealthier households tend to have a higher level of participation in public religious observations than do poor households, and this results in a positive association between wealth and religious paraphernalia involved in such ritual. Poorer households, on the other hand, often show a greater concern with private familial ritual, and the material expressions of such ritual therefore show a
negative association with wealth. The Mesoamerican civil-religious cargo system provides a good example of the linkage of public religious observation to wealth in agrarian societies. In areas where the cargo system still plays an important role in community integration, wealthier households clearly participate at a higher level, sponsoring more and larger fiestas than poorer households (Cancian 1965; Hayden and Cannon 1984:152–173). Furthermore, Hayden and Cannon show that the level of participation of a household in civil and religious cargos is reflected in the frequency of associated material items in the residential setting (1984:96–106, 164–171; see also Deal 1983:146), although the statistical association is not high (for reasons which they discuss). In areas of Mesoamerica where the cargo system rituals no longer play an important role in community solidarity and integration, however, the association between participation and wealth is not found (e.g. Lewis 1951:272f); in fact, DeWalt reports a negative correlation between cargo participation and wealth in Temascalcingo (1979:123).

When a private familial ritual is considered, poor households in central Mexico show a greater participation and a greater frequency of relevant material items (most of which are associated with household altars). In Panaderos for example (see Table 3 above), the value of a household’s religious items exhibits a (very weak) negative correlation with its total value of possessions, and the two poorest households contained religious items worth nearly three times as much as those of the two wealthiest households. In Tepoztlan, Lewis (1951:214–218) found that although a typical rich household spends somewhat more annually than a typical poor household on both religious items and other religious fiesta expenses, such religious expenses comprised a much larger proportion of the total household budget for the poor family (3.2% compared to 0.8% of total annual expenses). Lewis also compared households in Casa Grande (a middle-income residential complex) with the much poorer households of Panaderos, and found a greater intensity of household religious observance among the latter group (1970:437–439). DeWalt (1979:123) reports that his variable "religiosity" (a scale based on church attendance and frequency of communion) has a negative correlation with wealth. If this religiosity also extends to household ritual participation (which is likely), then the pattern is similar to that found by Lewis in Tepoztlan and Mexico City.

The positive association between wealth and involvement in public religious observance has also been documented for traditional China. Ancestor worship was carried out in two types of context—the household and the lineage ancestral hall—differentiated by ideology, rituals, and material objects involved (Feedman 1958:81ff). The scale of worship at the ancestral halls was clearly related to lineage wealth (which in turn is
associated with household wealth of lineage members); poor lineages might not have an ancestral hall, while the quality of construction of halls and the frequency and scope of ritual activity were expressions of wealth (Freedman 1958:48ff; Yang 1945:137ff). Worship at ancestral halls may be considered public in the sense that (1) many separate households were involved; (2) the location of activity was not in a domestic setting; and (3) the rituals served the function of extrahousehold social solidarity. I have not been able to find any information on the association between domestic ancestral worship (or other domestic ritual) and wealth in traditional Chinese society. One example of the suggested relationship for a quite different cultural setting is provided by Laumann and House (1970:Fig. 1) in their study of contemporary United States living rooms. They examined the relationship of particular items to "status" (which in turn is related to wealth), and found that two of the types of goods lowest in status were religious objects and religious paintings.

These findings on the disjunction between public and private religion in their association with wealth reinforces the emphasis placed on artifact function above. Archaeologists need to establish first that a given class of objects served a religious or ritual function, and second, objects used in domestic ritual should be separated from those used in public rituals. This will probably be a difficult task in most archaeological settings, but the issue must be dealt with if religious items are to be used in the analysis of wealth.

7. Nonutilitarian luxuries. Luxuries and necessities are defined by economists as follows:

Necessities are defined as those goods which are bought in the same quantities regardless of changes in prices or in supply . . . Luxuries, by contrast, are a completely heterogeneous class defined as those goods on which the individual will quickly cut down, in response to a drop in income. (Douglas and Isherwood 1979:97)

Douglas and Isherwood proceed to divide luxuries into two types:

An anthropological definition allows of two kinds of luxuries—one the mere rank signifiers, such as the best china for the family christening; the other, the newest technological aids, the innovating capital equipment, which relieve the pressure on available time, space and energy. (Douglas and Isherwood 1979:112).

Most discussions of luxuries by anthropologists have concerned the second type—industrially produced technological aids. Hayden and Cannon, for example, define luxuries as "all items which could be considered to indicate an expenditure beyond standards for most people in the village" (1984:125), and their list of luxury items in Maya villages (1984:107) is dominated by technological aids and other costly industrial imports (they report a positive but weak and inconsistent relationship between luxury item possession and wealth (1984:112, 128)).
Guttman scale inventory studies listed in Table 2 above are also dominated by technological luxuries like automobiles, televisions, and refrigerators. In short, most ethnographic studies of luxury goods and wealth focus on items without counterparts in preindustrial settings, and are therefore of limited usefulness to archaeologists.

For the present analysis, it is useful to single out nonutilitarian luxuries. This category eliminates industrial items as well as high-value utilitarian goods (like serving or food preparation ware) that are discussed separately above. There is considerable evidence linking nonutilitarian luxuries to household wealth. Lewis’ data from Panaderos (Table 3 above) show that jewelry has one of the strongest associations with wealth of any category. In Laumann and House’s (1970:192) study of modern living rooms, luxuries like sculpture and abstract paintings are at the high end of their (wealth-related) status scale. Archaeological examples of the association between nonutilitarian luxuries and wealthy residences are common. For example, almenas (stone and ceramic roof makers of high value) are associated with high-status residences at Teotihuacan (Smith 1975:75); imported shell, jade, and other valuable objects are markers of wealthy households at Tikal (Haviland 1981:104), and silver is associated with wealthy residential contexts at Galindo in Peru (Bawden 1982:175).

Although the luxuries under discussion are termed nonutilitarian (in the sense that they do not have useful daily functions in a household context), they often play an important role in the political systems of agrarian states, serving as ”political capital” to help regulate political and social interaction between segments of the ruling elite class. As a result, control over the production and exchange of such items is an important part of the power base of local elites. This role was particularly important in the Aztec state (Blanton and Feinman 1984:676; Smith 1986; Brumfiel n.d.), and a similar pattern is suggested by D’Altroy and Earle (1985) for the Inca. Luxury items employed in this manner are often sumptuary goods, and their distribution in household contexts is therefore a good indicator of (1) elite vs nonelite residences, and (2) wealth variation within the elite class. In spite of their great value as wealth indicators in the systemic context, luxuries are of lesser use archaeologically. This is partly because such items are often made of perishable materials, but more importantly their high value produces very low rates of loss and discard and a high rate of reuse and scavenging. When these items do enter the archaeological record, however, they are good wealth indicators. Useful theoretical discussions of luxuries and their relationship to wealth and other social factors are found in Douglas and Isherwood (1979), Braudel (1981), and Appadurai (1986).
Summary

The above data indicate that there is a wide variation in the usefulness of different functional categories of goods for measuring the wealth level of households in agrarian societies. These findings are summarized in an impressionistic manner in Table 5, where usefulness as wealth indicators in systemic context is assessed in three categories—within the elite, within the commoner class, and between elite and commoner households. Based upon the available ethnographic and historical sources, clothing and serving ware appear to be the strongest and most consistent wealth indicators in agrarian societies, followed by furniture and non-utilitarian luxuries. These are not absolute judgments, however, since various functional classes will reflect wealth differently in different cultural settings. For archaeologists, two primary types of factors detract from the usefulness of various categories for goods for wealth analysis—lack of preservation in the archaeological record and the operation of cultural formation processes like curation, reuse, and scavenging that place limitations on the archaeological context as a direct expression of the systemic context of goods. These detractions are minimal for food preparation items and serving ware (Table 5), and as a result, the latter category becomes the most effective functional class of measuring wealth in archaeological situations. Rather than focusing all attention on this category, however, archaeologists are advised to examine possible wealth-related variation in a number of functional classes, and to combine this

<table>
<thead>
<tr>
<th>Functional Category</th>
<th>Usefulness within:</th>
<th>Systemic context</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Within Elite</td>
<td>Elite vs Commoners</td>
</tr>
<tr>
<td>Furniture</td>
<td>***&lt;sup&gt;c&lt;/sup&gt;</td>
<td>***</td>
</tr>
<tr>
<td>Clothing</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Tools and household equipment</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Food preparation equipment</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Serving ware</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Religious items</td>
<td>*</td>
<td>***</td>
</tr>
<tr>
<td>Nonutilitarian luxuries</td>
<td>***</td>
<td>***</td>
</tr>
</tbody>
</table>

<sup>a</sup> These judgments are based upon the data presented in the text.
<sup>b</sup> Archaeological usefulness is based upon a combination of preservation factors and the effects of cultural formation processes as discussed in the text.
<sup>c</sup> Consistently useful category; *, potentially useful in some cases; —, not useful.
approach with an examination of properties of overall household inventories.

HOUSEHOLD INVENTORY CHARACTERISTICS AND WEALTH

Ethnographic and historical studies show that in addition to variation in specific functional categories of goods, household wealth is also expressed in a number of properties of domestic material culture that cut across function. Three such properties are examined here—quantity, diversity, and origin.

1. Quantity

Wealthier households tend to have more material goods than do poorer households. Lewis reports this finding for both Tepoztlan (1951:182, 213–219) and Panaderos (1973:269). For the latter settlement, the number of goods in a house has a positive correlation with the total value of household goods (which measures wealth as discussed above). Kottak notes this relationship in Arembepe, Brazil (1983:93), and Schiffer et al. (1981:78f) report that inventory size in modern Tucson is more closely related to income than to household size. Because wealthier households possess more goods and consume more food (see above) than do poor households, they produce more domestic refuse per day (Phillips, et al. 1984:145–148), a finding of direct relevance for the archaeological study of household wealth.

2. Diversity

Not only do wealthier households possess more goods than do poor households, they also possess a greater variety or diversity of material goods (Lewis 1973:269; Douglas and Isherwood 1979:143f, 191f). Several archaeologists have noted this relationship between wealth and diversity (Smith 1975:74; Haviland 1981:103f), and Hayden and his associates found that diversity measures are often better wealth predictors than are frequency measures (Hayden and Cannon 1984:208f; Deal 1983:252ff, 293ff). Because of the strong influence of sample size on the level of diversity, a method like Kintigh’s (1984) simulation approach to the quantification of diversity should be employed in place of the simple measures proposed by Hayden and Cannon (1984) and Deal (1983).
3. Place of Origin

Material objects of exotic origin are good wealth indicators for a number of reasons. To start with, such items tend to have a high value because of the energetics involved in their procurement and their resultant scarcity within a given economic system (Polanyi 1968: 185ff; Drennan 1984:33—see the discussion of value below). For this reason, objects used as currency in nonwestern economies are often imported goods (Schneider 1974:164ff). However, the value of imported items often goes beyond the simple factors of energetics and scarcity. Helms (1979), for example, documents a situation in which exotic trade goods are endowed with ritual power in lower Central American chiefdoms. Chiefs compete with one another for control over the trade and circulation of these items, and they therefore serve as good markers of the wealthier chiefly group as contrasted with other households.

A more common link between exotic goods and wealth is based upon the observation that wealthier households tend to have geographically wider networks of social interaction and identification than do poorer households (Douglas and Isherwood 1979:160ff; Smith 1986). These long-distance interaction systems have two types of direct expression in household material culture. First, there will be a higher frequency of exotic goods, as well as goods from farther away, in households that participate in larger spatial networks. Second, such households will have a higher frequency of goods expressing stylistic interaction covering wider horizons. These goods may be locally produced, but exhibit decoration that is part of a geographically extensive stylistic network.

Douglas and Isherwood (1979:160ff) discuss their relationship of wealth to the spatial range of social interaction in general terms. DeWalt (1979:223–229) presents a factor analysis of households in Temascalcingo, Mexico, in which variables representing income and material possessions (see discussion of Table 2 above) both load highly on a factor interpreted as “extralocal orientation.” Smith and Heath-Smith (1980) and Rice (1983) both interpret examples of widespread decorative ceramic styles in Postclassic Mesoamerica as evidence of elite-oriented communication networks (rather than as evidence of migrations or simply stylistic diffusion as prior interpretations stressed). Other archaeologists who have used exotic goods to measure wealth include Wright (1972), Haviland (1981:104) and Rathje and McGuire (1982:712). Additional ethnographic evidence for this association is provided by Lewis (1973:257), Kramer (1982:74), and Deal (1983:370).

METHODOLOGICAL ISSUES

The material presented above demonstrates that within the systemic
context, household wealth in agrarian societies is clearly reflected in material culture inventories. In cases where investigators have reported limited or weak associations between wealth and household items, the explanation probably lies in the limited degree of wealth variation within the context studies or in a lack of a comprehensive treatment of household items (see note 3). However, before archaeologists can take advantage of these findings and use household artifacts to measure wealth in prehistoric settings, a number of methodological problems must be dealt with. Some of these have been alluded to in the text above, and four such issues are singled out for treatment here: measures of value, confounding variables, cultural formation processes, and the problem of household and community comparisons.

1. Measuring Value

Economists and economic anthropologists have traditionally approached the question of value from two perspectives. The Marxist perspective holds that a commodity's value is determined by the amount of labor involved in its production (O'Laughlin 1975:352f), while the neoclassical perspective holds that value (or price in monetized economies) is determined by the interplay of supply and demand (e.g., Schneider 1974:43–84; see Godelier (1977:146ff) on the interplay of labor and scarcity in determining value in a nonmonetary economy). Douglas and Isherwood (1979:114–127), expressing dissatisfaction with prior approaches to value, take a different tack and link the value of a good to the periodicity and social significance of its consumption. They describe this relationship (in terms of necessities versus luxuries) as follows:

The cultural aspect of necessities is revealed in their service in low-esteem, high-frequency events, while luxuries tend to serve essentially for low-frequency events that are higher esteemed . . . In our experience with goods, periodicity in consumption use marks rank and creates quality goods. (Douglas and Isherwood 1979:116)

Of these three approaches to measuring value—labor, scarcity, and periodicity—the former is most useful for archaeologists. Use of scarcity to measure value would be misleading with archaeological data because the operation of a number of cultural formation processes virtually guarantees that the relative scarcity of valuable items recovered archaeologically will not match their relative scarcity in the systemic context (see discussion below). Some notion of periodicity of consumption can be gained from artifact use-wear studies (see discussion of serving ware above), but this is not feasible for large-scale analyses based upon fragmentary artifacts (e.g., sherds). The labor involved in the production of
different types of goods, however, can be determined by archaeologists through careful use of analogy. Labor input is best measured by the time involved in production (Gross 1984), and if exotic goods of known origin are present, transport costs (in labor–time) can be added to production costs. Archaeologists have begun to use such “energetic” measures of value (see for example, Feinman et al. (1981) or Sanders and Santley (1983) on ceramic production, and McGuire (1983) or Abrams (1984) on architecture), and continuing ethnographic (Gross 1984) and ethnoarchaeological (Mandeville 1974) studies will help refine this approach in the future.

Some consideration should also be given to the matter of symbolic value, which may or may not derive from the energetic (or scarcity) value of an item. For example, elaborate serving ware is shown above to be strongly associated with wealth for symbolic reasons that surpass the simple energetic value of individual items. Because many material goods with a high symbolic value also have a significant stylistic component, the degree of stylistic expression of an object can serve as a crude measure of its symbolic value. Therefore, while decorated serving ware will be assigned a high value because of the labor involved in its production, it should probably also be given an independent rating for symbolic value when household wealth comparisons are carried out.

2. Confounding Variables

The kinds and quantities of goods present in households in systemic context are affected by a number of socioeconomic factors besides wealth. Among the more significant of these, Schiffer et al (1981:83) list the following three.

(I) Stage in the domestic developmental cycle. The wealth level of an individual household tends to increase throughout its normal developmental cycle (as more physical wealth is accumulated), and this factor must be controlled when making comparisons among households (Jones 1980:166ff). Most types of artifactual remains from households do not pertain to a single moment in time, however (except for de facto refuse left at the house’s abandonment). Primary and secondary refuse and provisional discard should generally include material from one or more complete domestic developmental cycles, and the length of time involved will serve as a control for this confounding variable.

(2) Degree of residential stability. This factor measures the frequency with which a household changes residence. Archaeologists are interested in the inverse perspective—how many different households have lived at a particular dwelling site? Residential stability may be higher in preindustrial communities than in the setting of Schiffer et al.’s study (modern
household possessions and wealth

Tucson), and this variable therefore would not be expected to have significant adverse effects on archaeological studies of the socioeconomic implications of household artifact inventories.

3) Time elapsed since the last move. This variable, which has a positive association with inventory size in the study of Schiffer et al. (1981:78f), is of considerable importance to archaeologists. As the span of occupation of a residence increases, not only does the total amount of refuse increase, but the types of goods deposited change (for example, rarer categories have a greater chance of being discarded or lost over a long span of occupation than during a short interval—see Rathje and Schiffer (1982:119)). Rathje (1983) proposes a method of controlling for this variable by standardizing wealth measurements (e.g., frequencies of luxuries in household deposits) in terms of utilitarian items whose frequencies are strongly influenced by the span of occupation and relatively independent of household wealth (he suggests using the frequencies of flint tools, grain-grinding tools, and total sherds for standardizing measurements).

In addition to these confounding variables isolated by Schiffer et al. (1981), wealth measurements may also be influenced by factors of household size and structure, occupations of household members, or ethnic group affiliation. Household size may influence wealth indicators like the quantity and diversity of goods, or quantity of serving ware, but this may not be a serious problem since household size has a positive association with wealth in most preindustrial settings (Yanagisako 1979; Netting 1982). The occupations of household members (e.g., farmers vs merchants) and the presence of specialized production activities within the home are other factors which may confuse wealth assessment. It should be possible to identify these situations in many archaeological cases, and their relationship to wealth is discussed in the text above. Finally, ethnicity can affect household inventories, particularly in the realm of food remains and ceramics (McGuire 1982). Intracommunity ethnic differentiation in agrarian states is often correlated with wealth and power distinctions (Cohen 1978), and archeologists have only begun to address this issue (e.g., McGuire 1982). The disentanglement of ethnicity and wealth thus presents a methodological problem that needs resolution. In summary, some of the non-wealth related factors influencing household inventories in the systemic context will have minimal effects on the archaeological study of household wealth, others can be identified and controlled for by the archaeologist, and some factors like ethnicity will present problems.

3. Cultural Formation Processes

Before any kind of social or behavioral inferences can be made from
household remains, the nature of household deposits and refuse must be determined for each study setting. A considerable amount of artifactual variability derives from differences between such types of remains as primary refuse, secondary refuse, de facto refuse, provisional discard, etc. (Schiffer 1976, 1983; Rathje and Schiffer 1982:105–125; Hayden and Cannon 1983), and this variability must be controlled (or at least minimized) before meaningful socioeconomic analysis can be undertaken. Different types of deposits will probably reflect wealth differently, and it is probably not valid to compare household wealth as derived, for example, from de facto refuse in one case and secondary refuse in another. Beyond the general necessity of documenting formation processes prior to undertaking any kind of socioeconomic analysis, two specific kinds of problems must be dealt with in the study of household wealth.

First, attention needs to be devoted to the question of “where the garbage goes” (Hayden and Cannon 1983). Agrarian societies are sedentary societies, and as such most of their domestic trash is deposited as secondary refuse (i.e., away from its location of use). Therefore archaeologists need to be able to associate specific secondary refuse deposits with individual households. This becomes increasingly difficult as settlements get larger and denser, because more secondary refuse gets removed from residential areas for reasons of hygiene and convenience (Rathje and Schiffer 1982: 116, 289). Dense urban settlements, where wealth variation is often of great interest to social scientists, present the greatest obstacles in this regard. However, even when settlements are relatively dispersed, a good deal of household refuse may be removed from the vicinity of the household, and refuse not removed in this manner may be scattered widely around the houselot rather than placed in discrete dense middens for the convenience of the archaeologist (Hayden and Cannon 1983; Deal 1983:185ff).

The second major problem that cultural formation processes present for wealth analysis is that a number of household goods that may be important wealth indicators in the systemic context will not enter the archaeological context in association with their household of primary use. There are at least two components of this problem. First, valuable items enter the archaeological record at a lower rate than items of little value because they have higher levels of curation, reuse, and scavenging (Rathje and Schiffer 1982:115–123; Hayden and Cannon 1983; Schiffer et al. 1981; Hayden and Cannon 1984:26). This is particularly a problem with luxuries as discussed above, although Rathje (1983) suggests that jewelry and other items of personal adornment will still be more common in refuse from wealthier households than poorer households due to their occurrence in greater frequencies and their higher rates of use. Second, some wealth indicators may be present in either higher or lower fre-
quencies than is to be expected in individual households due to other cultural practices. For example, expensive utilitarian items are often borrowed among households (Kramer 1982:741; Hayden and Cannon 1984:188); also, the nature of labor service arrangements in highly stratified societies may lead to higher or lower concentrations of specific wealth-related items (as discussed under tools and household equipment above). The way around these obstacles to wealth analysis is no different than for any other kind of social or behavioral study—the archaeologist needs to ascertain the nature of household archaeological deposits as best as possible, and to use this knowledge to guide assessments of individual household wealth and comparisons among households.

4. Comparisons between Households and Communities

It would not be useful to make programmatic statements about how archaeologists should go about measuring and comparing wealth among households. One’s measures and techniques depend heavily upon factors like the research setting (e.g., peasant villages vs urban centers), the nature of the data (e.g., housefloor artifacts vs midden debris), the size of the data base (e.g., four households, or 40, or 400), and perhaps most important, the particular research problem at hand. Nevertheless, some suggestions can be offered about promising approaches to the measurement and comparative treatment of wealth from household artifacts. First, it is advisable to use as many different functional categories of artifacts as possible. Data presented above show that while some categories (e.g., serving ware) may express wealth more strongly and consistently than others, many other functional classes can be effective wealth indicators in some settings. Second, the greater the variety of specific measures employed, the more likely it will be that useful information on household wealth will be generated. Simple frequency and diversity measures for different functional classes and subclasses are a good start; variables or scales based upon energetic or other assessments of value will provide additional insights.

When artifactual data are the primary source of wealth information, it is probably useful to begin with an inductive approach. The various wealth-related scales developed for households can be subjected to a factor analysis or perhaps cluster analysis followed by discriminant analysis of the clusters (see Cowgill et al. 1984). This should yield information on the strongest and most useful variables for measuring wealth, and these can be retained for further use. It may prove possible to construct a single multivariate wealth scale (perhaps based upon factor scores) which can be employed to give a unidimensional ranking of households. If inde-
dependent assessments of wealth like architectural remains are available, these can be employed together with the artifactual data (e.g., Bawden 1982) or else the two sets of data can be counterposed. For example, wealth and status at Teotihuacan were investigated in one study by starting with a threefold classification of residences (based upon size and architectural quality) into low, intermediate, and high status. These categories then served as groups for a discriminant analysis whose goal was to see whether or not the architectural groups could be distinguished by artifacts, and if so, which artifacts were the strongest groups discriminators (Smith 1975).

If data for a sizable number of households are available and one is interested in the nature and extent of wealth variation (inequality) within a community or other population, it is possible to use Lorenz curves and Gini indices (Jones 1980: 163–169; 424f; McGuire 1983: 127–131). The Lorenz curve summarizes the concentration of wealth among households (or other units) graphically, and the Gini coefficient expresses in a single measure the degree of wealth concentration within the population. These techniques are useful for summarizing wealth inequality in a simple intuitive manner, and for comparing inequality among diverse social settings. To apply them to archaeological household data, there are two requirements: (1) a unidimensional wealth scale is needed (or perhaps several scales for parallel analyses); and (2) there must be comparable measurements for a sizable number of households selected through probability sampling techniques. This section has mentioned only a few of the many approaches that can be usefully applied to the problem of comparing wealth levels and patterns within and between communities; as stated above, one's particular measures and methods must be determined separately in each case.

CONCLUSIONS

This paper represents an attempt to stimulate the systematic comparative study of the relationship between household possessions and wealth in agrarian states and its application to archaeological data. While the treatment of ethnographic, historical, and archaeological case studies is by no means complete or comprehensive, the sources cited above do clearly demonstrate a consistent and strong association between the kinds and amounts of goods found in households in systemic context and the level of household wealth. This general relationship holds in a number of diverse sociocultural settings and has been documented quantitatively by anthropologists, sociologists, and historians. Apart from a few observations on the relationship of quantity, diversity, and overall value of goods to wealth, however, the material expression of household wealth is
not a simple affair. Different functional classes of goods reflect wealth differently, and the nature of the relationship varies between and within socioeconomic systems. What is needed now is a more comprehensive and systematic examination of the published literature (along the lines proposed by Blanton 1984) and the expansion of relevant ethnoarchaeological studies (such as Hayden and Cannon (1984) and Deal (1983)) to explore more fully the range of variation and the principles at work behind that variation.

In moving from the systemic context to the archaeological context (Schiffer 1976), the association between household possessions and wealth becomes weaker. However, when cultural formation processes and other methodological issues are addressed it is clear that household artifacts can still be used to monitor wealth in archaeological settings. They may not represent the strongest class of wealth indicators (residential architecture probably reflects wealth more directly and consistently (Blanton 1984)), but household artifacts are certainly adequate in themselves for measuring wealth and can provide additional insights when used in conjunction with architectural remains. As archaeological studies of households become more common, the use of artifactual measures of wealth will assume greater significance and a more systemic methodology is required. This paper suggests some of the potentials of this approach, but considerable comparative and substantive work remains to be done.

ACKNOWLEDGMENTS

This paper is a revised version of a presentation ("'The Archaeology of Social Stratification: Measuring Wealth from Household Artifacts'") given at the 50th Annual Meeting of the Society for American Archaeology (Denver, CO, 1985). Some of the ideas discussed here were first presented at a talk in the Department of Anthropology, Northwestern University, in May 1984. I am grateful for useful discussions with James Brown, Michael Blake, Cynthia Heath-Smith, and Richard Blanton; the comments of an anonymous reviewer were also helpful. Brian Hayden and Richard Blanton kindly sent me unpublished materials related to the theme of this paper.

NOTES

1 This paper employs the common neo-Marxian anthropological definition of social stratification as the division of a society into vertically ranked categories or classes of individuals distinguished on the basis of differential access to basic resources (Fried 1967:185–191; Adams 1975:243–263; Smith 1976). Stratification is closely related to the notion of inequality, and all stratification systems involve social inequalities, but the two concepts are not identical. As discussed by M. G. Smith (1966), inequality is a universal feature of human societies, whereas social stratification exists only where inequality is pronounced and institutionalized. Defined in this manner, social stratification is certainly not a universal at-
tribute of human societies as some writers have maintained (Davis and Moore 1945), but rather is limited to state-level societies. While the findings of this paper probably have relevance to most agrarian societies, the primary focus is on wealth variation within agrarian states.

Before proceeding, some words should be said about the social context of wealth variation. While some inequalities of wealth among households are found in nearly all societies (e.g., Kay 1964; Smith 1966; McGuire 1983), they become extreme and pervasive only in states. Within state-level societies, wealth differentials form an important component of the overall system of social stratification (see footnote 1). In a socially stratified society, major discontinuities in the distributions of wealth, status, and power (see Weber (1946) for the classic treatment of stratification in terms of these variables) indicate the existence of social classes. While some writers prefer to limit the term class to modern industrial society (e.g., Fallers 1973), I favor a broader approach as exemplified by Lenski (1966) or Carol Smith (1976). For Lenski, a class is "an aggregate of persons in a society who stand in a similar position with respect to some form of power, privilege or prestige" (1966:74–75). In most agrarian states, there are two classes—a small dominant class, or elite, and everyone else. Measurable wealth variation in state societies is not limited to class divisions, however. Considerable wealth differences within elite classes have long been recognized (e.g., Finley 1973:53ff, 99ff; Lenski 1966:219ff), and recent ethnographic and historical studies of peasant classes, often assumed to be relatively egalitarian in wealth (Wolf 1966), has revealed considerable variation in household wealth levels (e.g., Lewis 1951; Mintz 1973; Berdan 1982). It is even possible for some members of a lower class to be wealthier than some members of a higher class when status or legal distinctions define classes (see Lenski (1966:77f) or Finley (1973:45) on legally defined classes or estates).

Two recent ethnoarchaeological investigations have yielded results indicating a very weak association between household possessions and wealth (Hayden and Cannon 1984:129, passim; Kramer 1982:71–75). However, these findings are not particularly surprising given the low level of wealth variability within the communities studied (as Hayden and Cannon suggest (1984:202)). Furthermore, Kramer did not carry out an inventory analysis but only tallied the presence/absence of a few types of household goods.

A number of recent anthropological treatments of commodities, consumption, and value have considerable relevance for the topic of this paper (e.g., Appadurai 1986; Belk 1983; Douglas and Isherwood 1979). Most directly useful is the latter work, which will be discussed in the pages that follow.

It is important to use a genuine functional classification rather than try to go directly from traditional archaeological typologies, based upon material and surface appearance, to an analysis of wealth. Consider the absurdity of an ethnographer using a classification analogous to traditional ceramic typologies in an analysis of household wealth: the hypothetical ethnographer would employ categories like glassware (including water glasses, mirrors, and light bulbs), unpainted wood (bookshelves, children's blocks, rolling pins), painted wood (pencils, picture frames, piano benches), and composite plastic and metal objects (radios, frying pans, and hair dryers). While some information on household wealth could be gleaned from such a classification, it is clear that a priori functional categories are far superior. (Examples of archaeological studies that have attempted to measure wealth using preexisting artifactual typologies include Smith (1975), Bawden (1982), and Kowalewski and Finsten (1983).)

REFERENCES CITED

Abrams, Elliott M.

1984 Systems of labor organization in Late Classic Copan, Honduras: The ener-

Adams, Richard N.


Appadurai, Arjun, editor


Arnold, Dean E.


Bartel, Brad


Bawden, Garth


Belcher, John


Belcher, John C., and E. Sharp

1952 A short scale for measuring farm family level of living. Oklahoma Agricultural Experimental Station Technical Bulletin, No. 46, Stillwater.

Belk, Russell


Berdan, Frances F.


Blake, Michael


Blanton, Richard E.

1984 Cross-cultural comparison of inequality and level of living among peasants. Proposal submitted to the National Science Foundation.

Blanton, Richard E., and Gary Feinman


Braudel, Fernand


Braun, David P.


Brumfiel, Elizabeth M.


Cancian, Frank

Castro, Alfonso, N. Hakansson, and D. Brokensha

Chapin, F. Stuart

Chapman, Dennis

Chapman, Robert, Ian Kinnes, and Klavs Randsborg, editors

Clark, Graham

Cohen, Ronald

Cook, Scott

Cowgill, George L., Jeffrey H. Altschul, and Rebecca S. Sload

D’Altroy, Terence N., and Timothy K. Earle

Davis, Kingsley, and Wilbert E. Moore

Deal, Michael

DeWalt, Billie R.

DeWalt, Kathleen M.

Douglas, Mary, and Baron Isherwood

Drennan, Robert D.


Fallers, Lloyd A.

Feinman, Gary M., Steadman Upham, and Kent G. Lightfoot

Finley, M. I.

Freedman, Maurice
Fried, Morton

Friedl, Ernestine

Godelier, Maurice

Griffiths, Dorothy M.

Gross, Daniel R.

Guttman, Louis

Haller, Archibald

Hally, David J.

Haviland, William A.

Hayden, Brian, and Aubrey Cannon
1984 *The structure of material systems: Ethnoarchaeology in the Maya Highlands.* *Society for American Archaeology, Papers,* No. 3.

Helms, Mary W.
1979 *Ancient Panama: Chiefs in search of power.* Univ. of Texas Press, Austin.

Huss-Ashmore, Rebecca, Alan H. Goodman, and George J. Armelagos

Jones, Alice H.

Kay, Paul

Kintigh, Keith W.

Klepinger, Linda L.
Kottak, Conrad P.
Kowalewski, Stephen A., and Laura Finsten
Kramer, Carol
Laumann, Edward O., and James S. House
Lenski, Gerhard E.
Lewis, Oscar
Mack, Raymond W.
1951  Housing as an index of social class. Social Forces 29:391–400.
Mandeville, Margaret
McGuire, Randall H.
Miller, G. L.
Millon, Rene
Mintz, Sidney
Nelson, Ben A.
Netting, Robert McC.

Netting, Robert McC., Richard R. Wilk, and Eric J. Arnould, editors


O’Laughlin, Bridgit


Otto, John Solomon


Pelto, Pertti J.


Phillips, David A., Jr., Ivan Restrepo, and William L. Rathje


Polanyi, Karl


Rathje, William L.


Rathje, William L., and Randall H. McGuire


Rathje, William L., and Michael B. Schiffer


Rice, Prudence M.


Sanders, William T., and Robert S. Santley


Schiffer, Michael B.


Schiffer, Michael B., Theodore E. Downing, and Michael McCarthy


Schneider, Harold K.

Sewell, William H. 1940 The construction and standardization of a scale for the measurement of the socioeconomic status of Oklahoma farm families. *Oklahoma Agricultural Experiment Station Technical Bulletin*, No. 9, Stillwater.


Wolf, Eric


Wright, Henry T.


Yanagisako, Sylvia


Yang, Martin C.