

Chapter 5. Methodology, Research Themes and Process

Reviews of 19th century American health and hygiene history, San Francisco's sanitation history, and archaeological studies in hygiene, health, consumption, households, and neighborhoods provided the basis for the research topics discussed here. These reviews reveal several research themes and methodological problems dealing with consumption. This study addresses consumer behavior at the household level and takes into account methodological problems by addressing differences arising from household type, household life course, and potential household specific differences, relating to health and hygiene, as identified in historical accounts.

The Household

The household as an analytical unit requires a clear definition. Avoiding some of the problems discussed in Chapter 1, this study does not require a universal definition of the household and thus, a localized version is most appropriate. The household unit is defined here as a group residing under one roof. The most common type of household among the population studied is the nuclear household, consisting of a couple and their children. The nuclear household has been “the dominant structure in Western society for the past three hundred years” (Hareven and Vinovskis 1978:14; Hareven 2000:4, 7). There are two other common types of households found in the late 19th century: the extended household and the augmented household (Hareven and Vinovskis 1978:15-17). The extended household includes, in addition to the nuclear family, one or more additional individuals related by blood or marriage. The augmented household consists

of the nuclear family and other unrelated individuals who are often boarding at the residence. Augmented households were more common than extended households in late 19th century urban centers, found in 20 to 30 percent of United States households, while extended families were found in only 12 to 15 percent (Hareven and Vinovskis 1978:17).

The household life course is a source of variation of household consumption, as noted in Chapter 1 under archaeologists' alternative term of 'life cycle'. The household life course is a term developed by historical demographers in order to acknowledge the rich diversity within family life structures which prevent one universal cyclical structure (Hareven 1978). One main factor in the progression of the life course is the age of household members. For instance, young, unmarried individuals were less likely to live in nuclear households but rather, board with strangers after they left their parents house and before they married (Hareven 1974:324). Thus, "urban residents in nineteenth-century America experienced several types of family and household organizations over their lifetime, and that these forms varied at different stages of their life" (Hareven 1974:324). According to Mark Groover, there are three phases in the household life course: expansion, fission, and replacement. In the expansion stage, children are present and there is positive household growth. In the middle, or fission phase, children are 15 years or older, and begin leaving the home as negative growth starts. In the replacement phase, most or all of the children have left the home (Groover 2001:40-41). While other definitions of the family growth cycle exist (Hareven 2000:13), Groover's definitions will be utilized for this study due to their simplicity and compatibility with archaeological materials.

Research Questions

The following section presents several research questions which will be addressed in this thesis. These questions were developed from the literature reviews in Chapter 1 as well as the historical research discussed in Chapters 2 and 3. Each question is followed by its data sources, associated methodology, and expected results.

Household Type vs. Life Course Stage

Are there significant differences between the health and hygiene consumer choices of nuclear, extended, and augmented households respectively? If there are significant differences, it is expected that nuclear families will make choices more as a cooperative unit, translating into more consistent percentages of hygiene and health products. Extended households are expected to vary more widely, and augmented households to have the greatest variability. Likewise, are there significant differences between consumer choices of expanding, fission and replacement households? It is expected that expanding households will have less variation, due to their financial constraints, while the other two phases increase in variation due to more working individuals, less uncertainty, and increasing independence. Finally, which is a more accurate predictor of health and hygiene consumption, the household type or life course stage?

A combination of historical and archaeological data will be used to examine these issues. First, the degree of variance for the various household structure types will be calculated. Using historical documentation in primary sources such as census and city directories, as well as research compiled in the Cypress and SFWBA Block Technical

Reports, each household will be categorized by their type, either *nuclear*, *augmented*, or *extended*, as defined above. Second, the MNI of three specific groups of hygiene and health products will be calculated. These groups of artifacts represent hygiene in dental and hair products and health in patent and prescription medicine bottles, which will be combined into one medicine category. These three groups were chosen because they are both prevalent in the archaeological record and have a relatively short deposition lag time. The calculated MNI for each group will then be divided by the number of known residents at the time of deposition. This quantity will represent the number of products per person and will help account for differences based on volume. Lastly, to calculate the relative variability by product group, standard deviation will be used.

Standard deviation is a common measure of statistical dispersion, measuring how spread out values are. Thus, if all the points are close to the mean of the data set, then the standard deviation will be closer to zero. For the purposes of this study, it is assumed that the artifact assemblage represents a normal distribution, which is defined as a family of distributions that only vary in location and scale. In a normal distribution, if the standard deviation is 1 or below, the variance in the data is considered normal. If the deviation is above 1, then the variance is abnormal and represents a more unpredictable variable. Standard deviation is calculated by: (1) calculating the average value; (2) calculating the difference between each value and the average value; (3) calculating the square of each difference; (4) adding these together; (5) dividing by the number of values in the set minus 1; and (6) computing the square root of this number (Triola 2001:70-80). Standard deviation does not work for data sets of two or less.

Second, the degree of variance will be calculated for household life course stage.

While involving different categorization, the data and steps needed to address this question are similar to that of household type. Once again, a combination of historical and archaeological data are needed. Using primary historical documentation such as census and directory records, as well as research completed in the Cypress and SFWBA Block Technical Reports, households will be categorized by their life course stage, either expansion, fission, or replacement, as defined above. Second, the MNI will be calculated for the three main groups of hygiene and health products. The calculated MNI for each group will then be divided by the number of known residents at the time of deposition. As with the household types, standard deviation will be used to calculate the relative variability of the product group.

Household Sickness-Allocation of Resources

Do households containing documented disease deaths spend more on medicine than households with no known sick individuals?

The same approach used to assess the household types and product groups above will be used but with the variable changed to sickness in households. Using primary historical documentation such as death certificates and newspapers, each household will be categorized by the death of their members in one of three categories: (1) *disease*, for those with known disease or other chronic illness deaths, (2) *none*, for households with no known deaths, and (3) *potential* for homes where deaths occurred, but for which there is no known cause. Only *disease* and *none* categories will be examined. Second, the MNI of the three main groups of hygiene and health products will be calculated for each

category. The calculated MNI for each group will then be divided by the number of known residents at the time of deposition. Lastly, to calculate the average amount of variance by product group, the standard deviation will be calculated.

Household Sickness-Identifying Unknown Death Causes

Can deaths caused by disease be identified in households where members died of undocumented causes?

Based on the categories defined from the above question, the MNI will be calculated for the *potential* category. This will then be divided by the number of residents at the time of deposition and the standard deviation will be calculated. The expectation is that the *disease* and *potential* categories will have similar variances, which will be significantly different from that of the *none* category.

Summary

Through the methodological steps discussed here, the consumer behavior of late 19th century households will be examined. Using data from historical and archaeological sources in addition to MNI counts, percentages and standard deviation calculations, the consumption of different household types, their life course, and health will be examined. Investigating these questions will further our understanding of variation in the health and hygiene practices of individual families in the late 19th century.