1979

The National American Market in Historical Archeology: Urban Versus Rural Perspectives

Suzanne M. Spencer-Wood
University of Massachusetts - Boston

Follow this and additional works at: https://scholarworks.umass.edu/anthro_res_rpt18

Part of the Anthropology Commons


This Article is brought to you for free and open access by the Anthropology Department Research Reports series at ScholarWorks@UMass Amherst. It has been accepted for inclusion in Research Report 18: Ecological Anthropology of the Middle Connecticut River Valley by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.
The growth of a national scale American market in the 19th century is an historically well documented cultural process. To what extent can this national scale process be archeologically documented with artifacts from a single site in a rural Vermont village? Hypotheses were developed to predict characteristics of the artifact assemblage which would measure the degree of participation by citizens of Dummerston, Vermont in the growth of the national American market.
Redman (1974) has noted that more recent archeological research has focused on the properties of cultural entities than on the contextual positions of such entities within the cultural system. Thus, research on market systems has traditionally focused on the internal structural properties of these cultural entities taken as a whole. Predictive relationships have been established between developmental processes of regional interaction spheres and changes in the distribution of different site types at this same regional level of culture (Streuver 1972; Rathje 1972). Such authors have as their goal the formulation of cultural laws relating archeological and processual variables at the same systemic level.

In contrast with this perspective, the following research is concerned with establishing predictive relationships between a site's artifacts and its locational position in the context of a market system. This approach is similar to that pursued by Willey and Shinkin (1974) when they drew test implications, from their theory of the fall of the Maya, for artifacts at ceremonial type sites. The following research is an attempt to establish the extent to which a site's locational context within a developing market system accounts for the variability in the sources of the site's artifacts. The strategy of making predictions about a site's artifacts from its position in such a large scale process is important in formulating causal laws relating sites to their regional and interregional context. Although this type of law has been generally overlooked, it figures importantly in understanding the vertical integration of a site into its context.

The following research is concerned with formulating and testing predictions relating the 19th century development of a national scale American market to changes in the markets sources of artifacts from sites at different locational positions within the market context. The substantive problem was to predict the effect of site location on the degree of participation in large scale regional or national markets versus local markets. The methodological research goal was to ascertain some of the complex relationships between site location within a market system and the resulting possible predictions concerning the source of site artifacts.

Theoretically, a site's degree of participation in a developing market system depends on a number of complex interrelated variables. Production for market depends on the availability of the three factors of production - resources, labor and capital - and accessibility to the market. A site's location with regard to transportation facilities and networks is a vital conditioning factor in both the availability of the factors of production and access to the product market. A site's location also conditions its comparative advantage in production for the market vis-à-vis other sites in the same and other regions. Transportation costs are vital not only in production for market, but also in the availability of other market products at a site. Thus, site location is one of the most important variables determining both a site's inputs into and outputs from a market system.
The national scale American market developed and grew during the 19th, and into the 20th centuries. Two growth processes - extensive and intensive - characterize this developmental trend.

Extensive growth of the national American market involved increases in population, capital and resources. The spread of people and transportation innovations in a general east to west direction increased the size of the national market as new areas were integrated into large scale trade networks. With greater access to larger scale markets remote frontier areas became increasingly dependent on the national market at the expense of local self-sufficiency. In order to buy attractive manufactured products, farmers had to develop commercial agricultural products which were in demand at the national market level. As more new regions were integrated into large scale trade networks, each had to develop an adaptive niche in which it had competitive advantage on the national market.

Intensive growth factors increased the level of integration among regions and sites in the national market system. Transportation innovations increased the intensity of regional and national market interaction by increasing the efficiency and ease of transportation. From the 19th into the 20th centuries, first turnpikes, then canals, steamboats, railroads, and finally cars and planes increased the speed, and decreased the cost, of transportation among all sites involved in large scale markets. At the same time, technological innovations increased the productivity of both agriculture and industry and allowed the development of large scale farms and factories.

It can be expected that a site's location within this changing network of connections will affect its artifacts. Specifically, the sequential development of the American market, with the extension of transportation innovations from east to west, generally resulted in earlier market participation by sites in eastern locales than in more western locales. Similarly the degree of national market participation by sites would increase with the spread of transportation innovations from east to west. Transportation innovations first increased the intensity of trade along major routes between national scale central places, followed by regional and local connections to these routes. Thus, the degree of market participation by smaller scale places. Thus, sites located in national market centers can be expected to become involved earlier to a greater extent in the national market than eastern regional or local scale market centers. This pattern of market participation can be expected to develop earlier in the east than the west, resulting in relatively greater national market participation at any given time by eastern over western sites. At the site level, increases in large scale market participation can be predicted to result in an increasing number of artifacts from large scale market sources.

Six sites were used to evaluate these propositions. They are the three urban sites of Puddle Dock, Portsmouth, New Hampshire, 1850-1907 (Ingersoll 1971); Sandy Ground, Staten Island, New York, 1890-1915.
(Schuyler 1974:39-41); Main Street, Providence, Rhode Island, 1826-1930's, (Stachiw & Margolin 1974); and the three rural sites of the Asa Knight General Store, Dummerston, Vermont, 1794-1920 (Elliott 1977); Custer Road Dump, Mackinac Island, Michigan, 1830's-1900 (Brose 1967); and Silcott, Washington, 1860's-1930's (Adams 1976:11-13). Those sites classified as urban were within the immediate hinterland of central places of national market production and/or distribution. Those sites classified as rural were not located at the juncture of any major trade networks, and in the cases of Silcott and Custer Road Dump, were at some distance from major national trade networks. Dummerston is located within the hinterland of the regional central place of Brattleboro on a major regional transportation route, an intermediate position.

The data analyzed in this research was composed of glass bottles from these six sites dating to parts of the 19th and 20th centuries. Glass bottles were analyzed because they comprised the largest class of available artifacts which could be traced to some extent by distinctive mark or design to a specific source area of manufacture. The other major class of marked artifacts, pottery, were excluded from the analysis because it was overwhelmingly British before the end of the 19th century, when American whitewares first gained enough prestige to sell pottery with American trademarks. Further, local types of pottery such as redware and stoneware were usually not marked and would thus be either excluded from the analysis or necessitate the use of least effort assumptions of probable source area, decreasing the precision of the analysis and the conclusiveness of the results.

Both spatial and temporal attributes of these sites affect predictions of their relative degree of involvement in large scale markets and the resulting quantities of artifacts from non-local market sources. Although urban sites would be integrated into the national market earlier than rural sites, all the sites analyzed predominantly date to periods of full market involvement. Thus, archeological differences in percentages of artifacts from local versus non-local sources will be predicted from relative degrees of national market involvement.

In the spatial dimension urban sites have greater access to the national market than rural sites because of their location near large scale central places at the juncture of major trade routes. Thus, in contrast to rural sites, urban sites can be expected to yield more artifacts from large scale regional or national sources, and fewer artifacts from local sources. The greater degree of national market involvement of eastern over western sites should be archeologically evident in more artifacts from non-local sources and eastern versus western sites.

In the temporal dimension, urban sites can be expected to yield more non-local artifacts at earlier dates than rural sites because of the earlier integration or urban sites into large scale trade networks. The temporal sequence from east to west of increasing large scale market involvement should yield a temporal increase in the number of non-local artifacts at sites in sequence from east to west.
Urban sites are predicted to yield a relatively greater percentage of artifacts from large scale market sources than rural sites of comparable time span. With the rural sites, the fact that they date sequentially later from east to west nullifies this spatio-temporal effect on their degree of national market participation. The remaining basis of prediction is the greater degree of market involvement expected at later sites. Thus, archeologically the later rural and urban sites can be expected to exhibit more artifacts from large scale market sources than earlier sites.

The archeological results initially appear to contradict some of the predictions. Over 50% of the bottles from the 3 urban sites were from local sources, while over 75% of the bottles from the 3 rural sites were from non-local sources. However, closer examination of these results discloses the urban site factors that condition the original predictions.

The predominance of bottles from sources within the local market spheres of the urban sites can be explained by the clustering of manufacturers of bottled preparations in major cities in order to obtain economies of agglomeration, in transportation and possibly economies of scale. Location at the juncture of trade networks yields economies in the transportation costs both of acquiring materials needed for the production of bottled goods, and in the costs of distributing them.

The size of the local urban population itself would be enough to give impetus to local manufacturing companies. However, it is impossible to determine how many of the bottles from the local sources of urban sites were from small scale as opposed to large scale producers without further investigation of the manufacturers themselves. Many of the bottles recovered, such as Davis's Vegetable Pain Killer from Providence and R.R. Radway and Co. from New York City, are known to be national scale companies. The fact that just under half of the bottles at Puddle Dock and Sandy Ground were from non-local sources also indicates that the majority of the bottles at these sites came from large scale companies either in the local, regional, or national spheres of the sites.

If the majority of urban bottle manufacturers were national scale companies, as the evidence suggests, then one of the predictions for urban sites is born out by the archeological results. The later the end date of an urban site, the more of its artifacts come from local sources. Puddle Dock, Portsmouth, dating 1850-1907, yielded 55% local bottles, followed by Sandy Ground, New York, 1890-1915, with 65% local bottles, and lastly by Main Street, Providence, 1826-1930's, with 84% local bottles. The percentage of bottles from local sources progressively increased with the later end date of each site. Thus this actually supports the prediction that sites would yield more artifacts from national scale sources as they increasingly participated in the growing national market.

The rural site's bottles yielded the expected pattern of increasing numbers from non-local sources as the national market developed over the 19th and into the 20th centuries. Custer Road Dump, 1830's-1900, yielded 75% non-local bottles, while Dummerston, with the longest time range of 1795-1920, yielded 87% non-local bottles, and Silcott, Washington,
Figure 1. Source areas of marked bottles: urban vs. rural sites.

Percentage of Bottles

Main Street
Providence, R.I.
1826-1930's
(Stachiw & Margolin 1974)

Puddle Dock
Portsmouth, N.H.
1850-1907
(Ingersoll 1971)

Sandy Ground
Staten Island, N.Y.
1890-1915
(Schuyler 1974)

Custer Road Dump
Mackinac Island, Mich.
1830's - 1900
(Brose 1967)

Asa Knight Store
Dummerston, Vt.
1795-1920
(Elliott 1977)

Silcott, Wash
1860's - 1930's
(Adams 1976)

LEGEND

= Bottles from Local Source Area
= Bottles from Non-Local Source Area
1860's-1930's, yielded 97.8% non-local bottles. These percentages reflect the dearth of local manufacturers of bottled goods and the resulting high degree of integration of these sites into larger trade networks for these items. The predominance of non-local sources reflects the distance of these sites into larger trade networks for these items. The predominance of non-local sources reflects the distance of these sites from major junctures of trade networks where manufacturers cluster for the comparative advantages of economies of transportation, agglomeration and scale (Figure 1).

As expected for the rural sites, the later the time period of occupation, the more bottles come from non-local sources. The end date of occupation seems more important than the beginning date, since Dummerston, with the earliest beginning date and the second latest end date had the second highest percentage of non-local bottles. This may be due to the generally greater quantity of bottles produced and consumed in later, as opposed to earlier, time periods. Silcott had the highest percentage of non-local bottles because its time span started and ended later than that of the other two sites. It is also located in an isolated area where the dearth of local manufacturing or good regional trade connection necessitated greater reliance on national scale trade. The majority of bottles from Custer Road Dump and Dummerston were both from regional rather than local or national market spheres, possibly because of the number of cities within the regional spheres of these sites. The rural site hypotheses were further born out in a more detailed analysis of the Dummerston material. This analysis included both glass tableware and bottles, thus increasing the validity of the results by enlarging the data base. These results evince the expected increase in the number of artifacts from more distant sources as this rural site became more integrated into the developing national market.

The glass was analyzed according to four time periods and three areas. The date ranges were 1795-1830's, 1830's-1860's, 1850-1880's, and 1880-1920. These time periods were delimited according to the temporal coincidence of the date ranges of the largest number of artifacts which could together form a period. The overlap of the end dates of time periods with the beginning dates of the subsequent time period was necessitated by the exceptionally long date ranges of a few artifacts, which extended beyond the subsequent cluster of initial manufacturing dates.

Three market areas were defined according to spatial discontinuities in the artifacts at radical distances from Dummerston. The local sphere encompassed 0-65 miles, the New England regional area 65-100 miles, and the national area 100-700 miles (Figure 2).

The glass demonstrated the expected trend indicating Dummerston's increasing participation in the national market over time. The percentage of local glass decreased from 33% in 1795-1830's to 0% by 1880-1920, while glass from the national market area increased from 17% in 1795-1830's to 85% in 1880-1920. The percentage of glass from regional New England sources also decreased from 50% in the early period to 15% by 1880-1920.
Temporal Trends in Artifact Percentages from Source Areas

Source Area Designations

- - - - - = Local
- - - - = East, National
- - - - - = New England Region
- - - - = West, National

Figure 2. Dummerston glass microanalysis.
Thus the results of this finer scale analysis support the general distance-development hypothesis, i.e., that artifacts from more distant sources become more frequent as a site increasingly participates in the developing national market during the 19th and early 20th centuries.

In conclusion, the location of a site strongly conditions the archeological evidence of its involvement in the national market. This relationship is a complex one involving not absolute location, but position relative to the development of national market manufacturing centers. This test case has confirmed more of the archeological predictions for rural sites than for urban sites. The analysis of rural sites and the Dummerston analysis both demonstrated the expected pattern of temporal increase in artifacts from national market sources at the expense of those from more local sources as sites became increasingly involved in the growth of the national market. Because the dates of the rural sites were progressively later from east to west, all of the sites were already predominantly engaged in national market rather than local exchange. Thus the predicted spatio-temporal spread of involvement in the market from east to west could not be tested. Further research utilizing earlier site data could be used to test this hypothesis.

As was noted for urban sites, involvement in the national market does not involve a shift away from local market sources of artifacts, because these are the very sources which develop into national scale producers with the comparative advantages of location in urban central places. Thus urban sites in fact yielded an increasing percentage of artifacts from local as opposed to non-local sources as the national market developed. While seemingly contradictory, this evidence actually supports the hypothesized prediction that increasing participation in the growing national market would yield an increasing number of artifacts from large scale manufacturers over time.

Only glass traceable to manufacturer by mark or pattern (for the Dummerston tableware) could be utilized in this analysis. Thus the results are probably biased towards exchange with large scale national manufacturers, who would be more likely to mark their products than local small scale manufacturers. Other methods of analysis, utilizing other types of data, might increase our information on the relative market positions of different sites. For instance, a wider range of material could be considered, such as pottery and metal artifacts, but such analyses would again be limited to marked items.

Demographic relationships may be other sensitive indices of market interaction. Paynter, in his 1976 study of the Middle Connecticut River Valley towns, found that population decrease could not be explained by exhaustion of local natural resources, but instead was suggestively linked with factors indicating the degree of successful adaptation to production for the national market (Paynter 1976). Reversing this relationship, geographers have used the gravity model to predict the degree of market interaction between towns on the basis of their population size and the transportation distance between them. Similarly, in the central
place model, primary central places in trade networks have larger popu-
lations than secondary or tertiary central places. These models, which
relate population to intensity of market interaction, may be quite fruit-
ful for stimulating further research using both demographic and artifactual
data as indicators of changes in market interaction.

The use of other types of data, such as demographic statistics, may
also permit consideration of some of the factors besides location which
affect site participation in the national market. Nationally popular
styles produced by large scale manufacturers for national distribution
may not be the preferred style of some localities, decreasing their trade
with national scale companies. Income differences between towns may also
affect their degree of participation in national versus local exchange as,
for example, at Silcott, home remedies in recycled bottles were substituted
for nationally marketed patent medicines (Adams 1976). New distribution
methods of manufacturers, such as mail order catalogues and inclusion of
items in laundry soap boxes, may increase the distribution area of manu-
facturers. The conjunctural analysis of different kinds of archeological
and documentary data would add to our understanding of the position of
different kinds of sites in the process of national market development.
But further research is needed into the individual effects of such vari-
ables on national market participation before the complex interaction of
all the factors involved can be considered.

Aside from the advisability of using other lines of information, the
artifactual data does provide an index of the degree of site participation
in the developing national market. This is most clearly evident in the
Dummerston analysis, and secondarily in the rural site analysis. This
case study demonstrates that a site's position in this developmental process
is recorded in the artifact inventory, providing tangible evidence of the
growth of the national market from rural as contrasted to urban site per-
spectives.

Acknowledgement

Research made possible in part by a grant from Old Sturbridge Village, Inc.
REFERENCES CITED

Adams, William H.

Brose, David S.

Elliott, Suzanne

Ingersoll, Daniel W.

Paynter, Robert

Rathje, William L.

Redman, Charles L.

Schuyler, Robert L.

Stachiw, Mayron O. and Lisa Margolin

Streuer, Stuart

127
Willey, Gordon R. and D.B. Shimkin
1974 The collapse of Classic Maya civilization in the Southern Lowlands:
a symposium summary statement. In The Rise and Fall of Civilizations,
Cummings Publishing Co.: Menlo Park, California.