APPENDIX H

Statistical Analysis

STATISTICAL ANALYSIS METHODS

Bruce Owen

INTRODUCTION

The statistical analyses in this report share a common approach and methodology, described in this section. Methodological details specific to each material type—including animal bone, glass and ceramic containers, and ceramic tableware—are described in their respective sections.

The collections used from these analyses are those from the Cypress Replacement Project in West Oakland (Oakland), the SFOBB West Approach Project archaeological study in San Francisco, and the current archaeological work for SF-80 Bayshore Project. The analyses all seek statistically significant patterning in the distribution of general categories, such as beef bone or beer bottles, among excavated features divided according to potentially meaningful cultural categories established from documentary sources. The artifact categories are listed in their respective sections. The classification of features is summarized in the table below.

Category	**Includes/rationale**
Ethnicity	San Francisco: German, Irish, English, U.S.-born white, Mixed Oakland: African American, German, Irish, U.S.-born white, several uncommon ethnicities. Mixed and uncommon ethnicities are included when comparing each of the above with "all others."
Occupation category	Wealthy Professional, Professional, Skilled, Unskilled. Households with Semiskilled workers are lumped with Skilled.
Dwelling type	San Francisco: Single-family residence (may have boarders/lodgers); Multifamily residence (duplex, flats, may have boarders/lodgers); "Lodgings" (multiple, presumably low-status); Commercial property with lodging Oakland: Different housing categorization, not considered here
Street frontage	Main (Harrison, Bryant, Folsom); Interior (Chelsey, Kate, Maria, Perry, Clementina); Numbered (Seventh, Eighth, Third). Oakland: Not available.
Tenancy status	Owner, Tenant, Unknown. Missing data are treated as Unknown. .
Neighborhood	San Francisco: Mission Bay, Rincon Hill Oakland: East of Market Street, West of Market Street, Oakland Point
City	San Francisco or Oakland
Feature type	Privy, Well, Other/mixed

The context data used here were provided by Mary Praetzellis in April 2004.

I reported on similar analyses for the Cypress Project in Oakland (Owen 2004). The comparative data from that project used here is limited to contexts dating to before 1890, and includes some additions. The San Francisco contexts are categorized using a slightly different set of variables. The methodology used here is substantially the same as that used in the Cypress analysis, and the description below is only slightly modified from that report, except for the addition of a discussion of minimum sample sizes.

APPROACH AND METHODS

Most of these analyses use percentage data in order to look at the composition of the assemblage from each "analytical unit," without considering the relative amounts of material from each context. The assumption in using percentage data in this way is that, over the long run, households consumed relatively similar amounts of meat, glass, ceramics, and so on. Thus so comparing the proportions of specific types of bone, glass, and so on relative to the total amount recovered should bring out differences in consumption that would otherwise be masked by culturally unimportant differences in the size and artifact density of features excavated. This is clearly an imperfect assumption, and it should be borne in mind that these analyses refer to percentages of items within their artifact classes (as in "15% of all identifiable meat weight from feature X was beef"), not to absolute amounts consumed.

The analytical units in these analyses are single or multiple stratigraphic units that are taken to represent a single sample of refuse from a single residential context, such as a house or a hotel. Each such context is represented by only one analytical unit, and each feature is taken to represent just one residential context, although this may be a simplification in some cases. By analyzing the percentage composition of artifact types (animal bone, bottle glass, etc.) from each analytical unit, differences in the size of these features and their depositional history are eliminated from consideration. Again, only the mix of artifact types is considered here; the amounts discarded are not evaluated.

The statistics used give equal weight to each feature. In effect, each analytical unit represents the mix of artifact types discarded by a single residential unit. The analyses are comparisons of the artifact-type mixes of these residential units.

The analyses proceed in steps, summarized here.

1. Select features suitable for the particular analysis.
2. Print a table showing the average values of each of the variables of interest for each category (such as Wealthy Professional, Professional, Skilled, and Unskilled)
3. Compare pairs of categories (such as Professional vs. Skilled) to see if any variable (such as beef) is significantly different in the two categories of contexts.

4. Do similar pairwise comparisons using lumped categories (such as Irish vs. all non-Irish)
5. Do additional pairwise comparisons between comparable categories in San Francisco and Oakland (such as Professionals in San Francisco vs. Professionals in Oakland).
6. Do comparisons of categories (such as Professionals vs. Skilled) in the entire sample of both San Francisco and Oakland, lumped together as representative of the urban San Francisco Bay area.
7. Interpret the results.
8. Perform additional, different statistical tests to answer specific questions that arise.

First, the features to be included in any given comparison were selected to include only those for which the relevant context data were available. Additional restrictions were also applied in many cases, for example limiting the cases to residential, as opposed to commercial, properties.

Second, the data were summarized according to the context variables (such as English, German, Irish, U.S.-born white) and reported in a table showing the mean values of all the variables (such as pork). These values average the percentages of the features, so small features count the same as large ones. They give a sense of the central tendencies of each context category. These means of percentages may not add up to 100 percent.

These tables of mean values are useful exploratory tools, but they are deceptively difficult to interpret. The mean values may hide a great deal of variation, and especially with the small sample sizes here, the differences they suggest may not be meaningful. How large must a difference be to be considered important? How close must two percentages be to be considered effectively the same? It is even possible for the means to be identical when there is actually a real difference between the categories. Consider a hypothetical case in which all the features from Latvian households had around 10% grooming bottles, while among the five Estonian households, four features had no grooming bottles and one had 100% grooming bottles, for an average of 20%. The mean values would suggest that Estonian households typically had a higher proportion of grooming bottles than did Latvian households, when in fact the opposite was true.

The third step of the analysis attempts to resolve these problems by evaluating the statistical significance of the differences between categories of features. The statistics used are nonparametric, that is, they do not assume a normal (bell-shaped) distribution of values. This is important, since the small sample sizes mean that the luck of the draw is likely to produce non-normal sample distributions even if the underlying patterns are normal. Moreover, humans are complicated, and there is no reason to assume normal distributions of behavior in such historically particular, individualistic matters as food preferences. Parametric tests, such as the familiar t-test, will often find "significant"

differences between small samples of archaeological data simply because they are not normal and thus fit poorly to the t-test's null hypothesis: that both samples are drawn from a single normal distribution.

The statistic used here is the Wilcoxon rank-sum test (also called the Mann-Whitney-Wilcoxon Test) for cases with two classes (such as a comparison of percent alcohol bottles in Professional features vs. Unskilled features). This statistic is well explained in the following source:

Gibbons, Jean D.
1993 *Nonparametric Statistics: An Introduction*. Sage University Papers Series on Quantitative Applications in the Social Sciences, 07-090. Sage Publications, Newbury Park, California.

In essence, the test arranges all the values in rank order, from smallest to largest, disregarding the size of the differences between them. If the percentage of alcohol bottles was greater in single-family houses than in multifamily houses, the values from single-family houses would mostly be towards the high end of the list, and the values from multifamily houses would mostly be towards the low end. If the percentage of alcohol bottles was the same in single-family and multifamily houses, then the values for each kind of house would be uniformly scattered through the whole list. The tests evaluate whether or not the list is significantly unbalanced by calculating the odds of getting a pattern at least that unbalanced if you were to put the values in order by chance, such as by randomly drawing "single-family" or "multifamily" from a collection of slips of paper with the appropriate number of each type. If the chance of getting a list as unevenly distributed as the observed one is low (less than 10%, or less than 5%), then the pattern is deemed to be significant, that is, probably due not to chance, but to a real difference between the two categories.

The Wilcoxon rank-sum test is used to compare all the possible pairs of categories, such as single-family vs. multifamily houses. These results are easy to interpret: a significant result means that the variable (such as percent alcohol bottles) is significantly different in the two categories. Significantly different means that the difference is consistent enough that it is unlikely to be random, so it is appropriate to look for a cultural explanation. A difference with a probability of 5% has only a 5% chance of having occurred randomly, so we can consider it probably the result of some systematic process, rather than the luck of the draw. A significant result does not mean that the difference is large. A real, significant difference might nevertheless be subtle and not very important. Consider the difficulty of interpreting a finding that Latvian households consistently used 1% more grooming bottles than Estonian ones. Significant differences indicate trends in the data that should be taken seriously. The pattern that appears is probably due to a real process, but the interpretation is up to the archaeologist.

The fourth step repeats the third, but using lumped categories such as features from professional and wealthy professional households vs. skilled and unskilled workers' households, or Irish vs. all others.

The fifth step is logically similar to the previous two, but it compares categories in San Francisco with their counterparts in Oakland, limited to contexts dated to before 1890 in order to improve contemporaneity with the San Francisco sample. This process starts by lumping all the San Francisco contexts and comparing them to all the Oakland contexts, and continues by comparing narrower categories with the analogous ones in the other city. This is possible only for categories that are identified in both cities. There are no comparisons of dwelling types across the two cities, for example, because the dwelling-type categories are different in each. Similarly, there is no comparison of African American households in San Francisco versus Oakland, because no African American households were sampled in San Francisco.

The sixth step is, again, logically similar. In this case, I lump the entire sample from San Francisco and Oakland together, treating it as a single population representative of the urban San Francisco Bay area. The larger sample size may permit more subtle patterns to be detected among the categories (such as Germans vs. all non-Germans).

The seventh step is interpretation, in which the results are subjectively evaluated to see if they make sense. I have done this in part by ordering the tables of significance tests so as to juxtapose comparisons that seem to be related, helping me and the reader to abstract generalizations from them. Others might notice and emphasize different patterns in the results. It is also important to look for multiple tests that confirm related trends. This is because the method used here is inductive. That is, I did not start with a hypothesis and test the data to evaluate it. Instead, I ran all the reasonable comparisons I could think of, and pulled out for discussion those that proved significant either at the 10% level (less than 10% chance that the two categories actually have identical distributions of values, that is, less than 10% chance that the difference is an illusion caused by the luck of the draw) or at the more convincing 5% level (less than 5% chance that the differences are an illusion caused by the luck of the draw). This procedure will produce some spurious "significant" results by chance. That is, out of one hundred tests of two samples of a single distribution of values, five are expected to show differences "significant" at the 5% level, just by chance. For this reason, isolated significant results may or may not reflect real cultural processes. Where multiple significant results seem to reflect a single underlying trend, then the trend can be considered real.

The eighth step is needed only when the previous one raises specific questions. For example, in the faunal analysis, some results suggested an unexpected relationship between meat-type preferences and the cost of cuts. In order to evaluate this, I made plots of meat-type percentages versus cut-cost percentages, and calculated correlations between the variables. These additional checks are described in their respective sections of the report.

Finally, the lack of statistically significant differences between most of the categories does not mean that there necessarily are no differences between the categories. It simply means that any differences present are not great enough to be detected with confidence based on the given sample size and variability.

The statistics were run on SAS software, using programs and data files specified in their respective sections. Percentages are presented rounded to the nearest percent, but all calculations are done to the full precision of the original data.

LIMITATIONS DUE TO SMALL SAMPLE SIZES

The ability to detect and interpret quantitative patterns is limited when the sample size is small. There are two distinct aspects to sample sizes: the number of cases being compared (for example, the number of features from Mission Bay households and the number from Rincon Hill households), and the number of artifacts that contribute to the value of each case (for example, 5 liquor bottles out of 10 bottles total in a particular feature).

First consider the number of cases, or features. The statistical tests used here (Wilcoxon rank-sum tests comparing two categories) have well-defined minimum sample sizes (summarized in the table below), below which they are incapable of showing statistical significance. There is no point in even considering the significance test results if the sample sizes are below these limits, because no matter how drastically and consistently the two categories might actually differ, the test is unable to show significance.

Minimum Sample Sizes for 10% and 5% Confidence Using the Wilcoxon Rank-Sum Test

# in category 1	# in category 2	Total n	Can show 10% significance	Can show 5% significance
1	10	11	Yes	No
1	20	21	Yes	Yes
2	4	6	Yes	No
2	5	7	Yes	Yes
3	3	6	Yes	No
3	4	7	Yes	Yes
4	2	6	Yes	No
4	3	7	Yes	Yes
5	2	7	Yes	Yes
6	2	8	Yes	Yes
7	2	9	Yes	Yes
8	2	10	Yes	Yes
9	2	11	Yes	Yes
10	1	11	Yes	No

These minimum numbers of analytical units assume that the two categories differ so much that they do not overlap at all. If the differences are more subtle, the sample sizes must be larger to detect a significant difference. For example, say Mission Bay households averaged 5% liquor bottles out of all bottles in each feature, with a range from 1% to 10%, while skilled households averaged 10%, with a range from 5% to 15%. Even if this difference were real, and unskilled households really did tend to have fewer liquor bottles than Rincon Hill households, a few of the hardest-drinking Mission Bay households would still have a higher percentage of liquor bottles than a few of the most-restrained Rincon Hill households. The minimum sample sizes mentioned above would not be sufficient to detect this real difference as significant. The more overlap between the categories, the larger the size would have to be in order to detect a significant difference.

These minimum sample-size requirements are modest, even compared to other tests that require more stringent assumptions about the data. The San Francisco dataset, however, is small enough that many ways of subdividing it fall below these sample-size thresholds. This means that no matter how real and strong the patterns may be, in these cases in which the sample sizes fall below the minima, they will not be detected. By the same token, this means that absence of significant differences does not necessarily imply that the households in the two categories are similar.

The reader can apply these minimum sample sizes to the artifact analyses by considering the "n" values given in the percentage data tables. These values indicate how many features are included in each category. For example, there are 2 unskilled households and 3 professional households in the San Francisco sample. In effect, there are no statistical results comparing unskilled and professional households, because the sample sizes are below the minimum required to show 10% significance. We simply cannot determine if there are any significant differences between these categories of households, and the absence of any such differences is in no way evidence that they were similar.

The other aspect of sample size is the number of artifacts that are used to calculate the value for each feature. Say two pickle jars are found in the entire project, and they happened to be from two of the three single-family households tested. Even if the sample of features is large enough to show that single-family households have significantly more pickle jars than multifamily households, how seriously should we take this result? While the significance test shows that this distribution of pickle jars is unlikely to have happened by chance, the percentages of pickle jars in each feature are determined by a very small number of items. Pickle jars are sufficiently uncommon that one or two idiosyncratic purchases could account for the entire pattern. These may have little real meaning in terms of general differences between kinds of households. If the very same pattern were established on the basis of 100 pickle jars, it might be no more significant in the statistical sense. The number of single-family household features with higher percentages of pickle jars might be exactly the same. But with a larger number of artifacts contributing to each of those percentages, we would be justified in thinking that

the difference between features reflected a consistent behavioral pattern, not just a few isolated events.

This aspect of sample size is not quantifiable. In the pickle-jar example, we might require well over two jars in order to be convinced of a pattern. But if the project found only two gold rings, and both were from wealthy professionals' households, we would rightly be more willing to believe that they reflected a general difference between wealthy professional households and others, because the meaning of the artifacts and the pattern is more obvious.

Since I did not have access to the raw faunal data, I could not evaluate this aspect of sample size for the meat analysis. In the container and ceramic analyses, I have noted results that are based on very small numbers of items. In these cases, even when the differences are deemed significant, their interpretation should be subject to careful, culturally informed scrutiny.

STATISTICAL ANALYSIS OF MEAT WEIGHT PERCENTAGES

Bruce Owen

SUMMARY OF FINDINGS

The most striking aspect of the San Francisco meat consumption data is its consistent and frequently statistically significant contrast with comparable data from pre-1890 Oakland recovered by the Cypress Project. Households in San Francisco consumed a mix of meats that was higher in beef and pork, lower in mutton, and probably lower in chicken, than did households in Oakland. Oakland households also consistently purchased more medium-cost meat than did San Francisco households, although the meaning of this difference is hard to discern. These preferences cross-cut most or all analyzed groups within each city, generally affecting all households similarly, regardless of profession category, ethnicity, homeownership or tenant status, and neighborhood. This city-wide, cross-cutting patterning suggests that the type preferences, and possibly the puzzling preference for medium-cost cuts, may have been influenced by large-scale factors that would have affected each city as a whole, such as the city's location relative to different meat-producing areas or in the network of shipping or meat-distribution routes.

There is little statistically significant patterning by profession, ethnicity, dwelling type, home ownership, or type of street in the summary faunal data from the SF-80 and WBA projects. This is probably due in part to the small sample sizes, but may also indicate that these variables did not have a very strong effect on people's meat diet.

The principal patterning in the meat data within San Francisco is by neighborhood. The residents of the Rincon Hill neighborhood consumed the most expensive mix of cuts of meat of any neighborhood in either city. People in the three Oakland neighborhoods consumed a slightly cheaper mix of cuts, with Oakland Point residents consuming the cheapest mix in Oakland. Finally, the residents of the Mission Bay neighborhood ate a dramatically cheaper mix than people in any of the other neighborhoods.

Nevertheless, residents of the apparently more cost-conscious Mission Bay neighborhood consumed a higher proportion of beef than did people in any of the Oakland neighborhoods, although this was significant only with respect to the two more prosperous Oakland neighborhoods East and West of Market. This probably reflects the San Franciscan city-level preference for, or better access to, beef. It also suggests that a tendency to purchase beef may not have been directly tied to economic standing, since the neighborhoods with the cheapest and the most expensive mixes of meat cuts both consumed relatively high proportions of beef.

People in the pre-1890 West of Market neighborhood of Oakland ate a higher proportion of mutton than did people in any of the other neighborhoods. In the Cypress analysis, I suggested that this pattern might be due to the higher percentage of Irish

residents in the West of Market neighborhood. This hypothesis is weakened by results from Mission Bay, which was even more heavily Irish, yet had significantly lower proportions of mutton than did West of Market. Moreover, there is no significant difference in the proportion of mutton between Irish and known non-Irish households in San Francisco or in both cities lumped together. Irish ethnicity is probably not an important factor in the differing preferences for mutton.

Comparisons with the two San Francisco neighborhoods highlighted differences in the Oakland neighborhoods. The East of Market neighborhood was probably the closest parallel in the Oakland sample to the apparently prosperous Rincon Hill in San Francisco. Conversely, findings support other indicators that the Oakland Point neighborhood was the most economically limited of the Oakland neighborhoods.

Contrary to tentative findings in the Cypress analysis, beef was not clearly the most valued meat type, since it did not correlate positively with higher proportions of expensive cuts, nor did it compare negatively with proportions of cheap cuts. In San Francisco only, mutton correlated with more expensive mixes of meat cuts, suggesting that mutton was more highly valued in San Francisco than in Oakland. In Oakland, pork was probably the least preferred meat type by this criterion, and there is a hint of a similar pattern in San Francisco. The differences between cities in the relative valuation of meat type further reinforces the conclusion that decisions concerning meat type often reflected considerations other than the economic ones that affected the choice between cheap, medium, or costly cuts, and that some of these considerations were ones that affected each city as a whole.

No significant differences were detected between privies and wells within San Francisco, but lumping the features from both cities indicated that the three wells in the sample of residential households accumulated more high-cost cuts than did privies, albeit with only 10% confidence. This pattern is not reassuring, since it suggest that privies and wells might not be comparable samples of household behavior, and if not, that they should not be treated as equivalent in the same analysis. Two of the wells, however, were located in the apparently privileged Rincon Hill neighborhood, so the differences may simply reflect the high economic status of the consumers that the wells represent. Alternatively, with such a small sample of wells, the pattern could be due to chance, or to the unusual behavior of just one or two households with wells. On the assumption that one of these alternatives can probably explain away the seeming difference between the two types of features, and in the interest of not further reducing the already small sample sizes, the wells are left in the present analysis. Future projects should be attentive to the possibility that wells and privies might not produce equivalent samples for analysis.

Further analyses, including a multivariate approach, might be helpful in disentangling the effects of the different classification variables here.

INTRODUCTION

This report describes results of a search for statistically significant patterning in the distribution of meat type (beef, mutton, pork, and chicken) and meat-cut cost categories (high, medium, and low among the three mammal meats) among features divided according to potentially meaningful cultural categories. The meat is measured in estimated meat weight for the type or cost of cut, as a percentage of total meat weight estimated for the feature (see Food-refuse Analysis: Faunal Remains in Chapter 6). Only beef, mutton, pork, and chicken are included in the analysis; meat weight for other birds, rabbit, and so on is ignored. The cultural categories are the same as those used in the other statistical analyses. They are summarized in the "Statistical analysis methods" section.

The faunal data in the form of percentages of meat weight were provided by Mary Praetzellis in early March 2004. The cultural context data were also provided by Mary Praetzellis, in April 2004. The comparative data from Oakland are from the Cypress Project. For this analysis, these data are limited to contexts dating to before 1890, and they include some additions since the Cypress report was prepared.

APPROACH AND METHODS

This analysis follows the general methodology described in under Statistical Analysis Methods, above. Some results suggested an unexpected relationship between meat-type preferences and the cost of cuts. In order to evaluate this, I made plots of meat-type percentages versus cut-cost percentages, and calculated correlations between the variables. These additional checks are described in the detailed section of the report.

As noted in the methods section, significant patterns based on small numbers of items should be assessed with caution, since a few idiosyncratic individuals or actions might account for the pattern, rather than any broad tendencies of the household categories being compared. Since the data for this analysis were already converted to percentages, however, it is impossible to evaluate how many bones, animals, or purchases may make up any given sample. A total of 100 identifiable bones was required to be included in the faunal analysis, this was deemed to be a sufficiently large number of meat purchases to be taken as representative of consistent behaviors by the members of each household.

The statistics were run on SAS software, using SAS instructions in the program CSMEAT2.SAS, faunal data from CYSFMEA2.DBF, and context data from CSCTX4.DBF. The program is a simple text file that can be viewed using any word processor, and the data files can be viewed directly by Excel or most database programs.

RESULTS: WITHIN SAN FRANCISCO ONLY

OCCUPATION (SF-80 AND WBA ONLY)

Occupation Category	Number of Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
Wealthy Professional	3	50	31	17	2.0		38	34	28
Professional	2	57	17	26	0.5		25	37	38
Skilled	6	62	26	10	2.4		40	34	26
Unskilled	2	59	19	19	2.6		23	35	42
Total:	13	58	25	16	2.0		35	35	31

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Chicken is reported with an additional decimal place to facilitate comparisons.

Comparisons:

All pairs of occupation categories

Wealthy (P+) vs. all others (P,S,U)

Wealthy (P+) vs. Middle (P,S)

Middle (P,S) vs. Unskilled (U)

Middle (P,S) vs. Extremes (U,P+)

Upper (P+,P) vs. Lower (S, U)

Any skill (P+,P,S) vs. Unskilled (U)

Significant Differences (comparisons that reached at least 10% significance):

Occupation Comparisons:	Variable	Which has more?	Probability	Sig @ 5%	Sig @ 10%
Professional vs. Skilled	Pork	Professional	0.0668		X
Skilled vs. Unskilled	Pork	Unskilled	0.0668		X
Professional vs. Skilled	Chicken	Skilled	0.0668		X

Interpretations:

There are no consistent and convincing patterns in meat consumption by occupation category within the San Francisco sample. Two of the three significant differences indicate that more pork was consumed by the households of both higher and lower professional status than by those of skilled workers. The percentage data are no less contradictory, not suggesting any intelligible trends for any type or for costs of cuts.

The sample sizes for each profession category are so small that some comparisons cannot produce significant results no matter how strongly the groups differ (see the discussion in the methods section), while the remainder is sensitive only to very strong differences. By the same token, the use of such small samples means that one or two strongly idiosyncratic households may create significant patterns, which is probably the case here. The two professional households average relatively extreme preferences for pork, against chicken and mutton, and against expensive cuts, considering their assumed economic standing. It would probably be unwise to infer anything about general tendencies of behavior from these data, other than that these two professional households may be unusual in some way.

ETHNICITY (SF-80 AND WBA ONLY)

Ethnicity	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
English	2	42	36	20	2.5		47	31	23
German	2	54	25	21	0.7		24	37	38
Irish	4	57	23	17	2.9		27	33	41
U.S.-born white	3	66	18	15	2.0		31	36	33
Total:	11	56	24	18	2.2		31	34	35

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Chicken is reported with an additional decimal place to facilitate comparisons.

Comparisons:

All pairs of common ethnicities

Each of the four common ethnicities vs. the other three lumped together

Each of the four common ethnicities vs. all the others lumped together, including mixed ones (not listed in the table above)

No significant differences were found.

Interpretations:

There is no significant patterning in meat consumption by ethnicity within the San Francisco sample. This may be due to the small sample sizes for each ethnicity, which make the tests sensitive only to very pronounced differences.

DWELLING TYPE (SF-80 AND WBA ONLY)

Dwelling Type	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
Commercial with lodging	1	42	27	30	0.4		30	34	37
Lodgings, multiple	1	57	22	20	1.6		20	35	45
Multifamily housing	3	64	25	10	2.5		40	33	27
Single-family residence	9	57	24	16	2.4		33	34	34
Total:	14	58	24	16	2.2		33	34	33

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Chicken is reported with an additional decimal place to facilitate comparisons.

Comparisons:

All pairs

Single-family vs. all others except commercial

Single-family vs. all others, including commercial

No significant differences were found.

Interpretations:

There is no significant patterning in meat consumption by dwelling type within the San Francisco sample. Again, this may be due in part to the small sample sizes for each dwelling type, which make the tests sensitive only to pronounced differences.

TENANCY (SF-80 AND WBA ONLY)

Tenure type	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
Unknown	3	64	16	15	4.2		19	29	52
Owner	3	50	31	17	2.0		38	34	28
Renter (Tenant)	7	60	25	14	1.7		37	36	27
Total:	13	59	24	15	2.4		33	34	33

Table excludes commercial property. Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Chicken is reported with an additional decimal place to facilitate comparisons.

Comparisons:

Owner vs. Renter (Tenant)

No significant differences were found.

Interpretations:

There is no significant patterning in meat consumption by tenancy within the San Francisco sample. Again, this may be due in part to the small sample sizes, which make the tests sensitive only to pronounced differences.

NEIGHBORHOOD (SF-80 AND WBA ONLY)

Neighborhood	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
Mission Bay	5	63	19	15	3.0		19	33	48
Rincon Hill	9	54	28	16	1.8		41	35	25
Total:	14	58	24	16	2.2		33	34	33

Table includes commercial properties. Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Chicken is reported with an additional decimal place to facilitate comparisons.

Comparisons:

Mission Bay vs. Rincon Hill

Significant Differences (comparisons that reached at least 10% significance):

Neighborhood	Variable	Which has more?	Probability	Sig @ 5%	Sig @ 10%
Mission Bay vs. Rincon	high cost	Rincon Hill	0.0113	X	X
Mission Bay vs. Rincon	low cost	Mission Bay	0.0076	X	X
Mission Bay vs. Rincon	mutton	Rincon Hill	0.0830		X

Interpretations:

The mix of mammal meat cuts found in the Rincon Hill neighborhood had a significantly higher proportion of high-cost cuts, and a significantly lower proportion of low-cost cuts, than the mix found in the Mission Bay neighborhood. Both of these patterns are significant at the 5% confidence level, and they tend to confirm each other. This is not automatically the case, since depending on the proportion of medium-cost cuts, either one could be significant without the other, or one extreme could be significant along with a significant difference in the medium-cost cuts. The meat-cut data suggest that people in Rincon Hill tended to consume more expensive cuts of meat than those in Mission Bay.

People in Rincon Hill probably also consumed a higher proportion of mutton than did those in Mission Bay, although this trend is significant only at the 10% level. Since Rincon Hill residents preferred a costlier mix of meats, this suggests that mutton may also have been relatively prized. Results concerning type preferences are complicated, and are discussed in other sections below.

STREET FRONTAGE TYPE (SF-80 AND WBA ONLY)

Street Frontage Type	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
Interior	8	62	21	14	2.8		31	33	35
Main	4	52	31	16	1.8		40	35	25
Numbered	2	50	24	25	1.0		25	34	41
Total:	14	58	24	16	2.2		33	34	33

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Chicken is reported with an additional decimal place to facilitate comparisons.

Comparisons:

All pairs.

No significant differences were found.

Interpretations:

There is no significant patterning in meat consumption by street frontage within the San Francisco sample. Again, this may be due in part to the small sample sizes, which make the tests sensitive only to pronounced differences.

FEATURE TYPE (SF-80 AND WBA ONLY)

Feature type	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
Other/ combined	1	42	27	30	0.4		30	34	37
Privy	11	57	24	16	2.6		32	33	35
Well	2	67	24	8	1.1		41	37	23
Total:	14	58	24	16	2.2		33	34	33

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Chicken is reported with an additional decimal place to facilitate comparisons.

Comparisons:

Privy vs. Well

No significant difference was found.

Interpretations:

There is no significant difference in the meat assemblages from privies and wells within the San Francisco sample. This finding suggests that including both types of contexts in this analysis probably does not introduce serious biases.

RESULTS: COMPARISONS BETWEEN SAN FRANCISCO AND OAKLAND PRE-1890 CONTEXTS

ALL SAN FRANCISCO CONTEXTS VS. ALL OAKLAND CONTEXTS

City	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
San Francisco	14	58	24	16	2.2		33	34	33
Oakland	53	50	34	12	3.1		32	39	28
Total:	67	51	32	13	2.9		32	38	29

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Chicken is reported with an additional decimal place to facilitate comparisons.

Comparisons:

All San Francisco vs. all Oakland

Significant Differences (comparisons that reached at least 10% significance):

City	Variable	Which has more?	Probability	Sig @ 5%	Sig @ 10%
SF vs. Oakland	Beef	SF	0.0568		X
SF vs. Oakland	Pork	SF	0.0800		X
SF vs. Oakland	Mutton	Oakland	0.0098	X	X
SF vs. Oakland	Medium	Oakland	0.0220	X	X

Interpretations:

There seems to have been a significant difference in the overall mix of meats consumed in San Francisco compared to Oakland. Households in San Francisco probably consumed a mix of meats relatively higher in beef and pork, although both patterns are indicated only at the 10% confidence level. Conversely, and even more clearly indicated at the 5% level, people in Oakland consumed more mutton than did

those in San Francisco. The percentage data suggest that people in Oakland may have consumed more chicken, too, but the difference is not significant.

Refuse from Oakland has a relatively higher proportion of medium-cost cuts, but the interpretation of this difference is not clear. With no corroboration from other cost comparisons, this pattern can probably be disregarded as not very meaningful, one of the spurious results expected by chance, or both.

OCCUPATION IN SAN FRANCISCO VS. THEIR COUNTERPARTS IN OAKLAND

City	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
San Francisco P+	3	50	31	17	2.0		38	34	28
Oakland P+	3	41	29	17	13.2		45	28	26
Total P+	6	46	30	17	7.6		41	31	27
San Francisco P	2	57	17	26	0.5		25	37	38
Oakland P	8	51	32	15	2.5		30	42	28
Total P	10	52	29	17	2.1		29	41	30
San Francisco S	6	62	26	10	2.4		40	34	26
Oakland S	20	49	38	10	2.8		28	41	30
Total S	26	52	35	10	2.7		31	40	29
San Francisco U	2	59	19	19	2.6		23	35	42
Oakland U	5	58	33	7	2.4		38	34	28
Total U	7	58	29	10	2.5		34	34	32

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Chicken is reported with an additional decimal place to facilitate comparisons.

Comparisons:

San Francisco P+ vs. Oakland P+

San Francisco P vs. Oakland P

San Francisco S vs. Oakland S

San Francisco U vs. Oakland U

Significant differences (comparisons that reached at least 10% significance):

City	Variable	Which has more?	Probability	Sig @ 5%	Sig @ 10%
SF Skilled vs. Oak Skilled	beef	SF Skilled	0.0828		X
SF Unskilled vs. Oak Unsk	pork	SF Unskilled	0.0814		X
SF Skilled vs. Oak Skilled	mutton	Oakland Skilled	0.0828		X
SF Unskilled vs. Oak Unsk	mutton	Oakland Unskilled	0.0814		X
SF Prof vs. Oakland Prof	chicken	Oakland Prof	0.0502		X
SF Skilled vs. Oak Skilled	high	SF Skilled	0.0634		X
SF Skilled vs. Oak Skilled	medium	Oakland Skilled	0.0633		X

Interpretations:

This section repeats the same comparisons between cities as in the preceding section, but limits them to a single occupation category in each city. This procedure reduces the sample sizes compared to the whole-city analysis, making the tests less sensitive, but it also reduces possible confounding effects that might confuse the picture if some of the between-city differences were expressed differently among different occupational variables. For example, if the lifestyle of wealthy professionals in San Francisco differed from that of wealthy professionals in Oakland, while unskilled laborers lived similarly in both cities, this analysis should bring those patterns out.

In fact, these comparisons suggest that in general, the whole-city trends noted above may apply across most or all of the occupational categories. That is, skilled households in San Francisco consumed more beef than did their counterparts in Oakland; unskilled households in San Francisco consumed more pork than did their counterparts in Oakland; and both skilled and unskilled households in Oakland consumed more mutton than did comparable households in San Francisco. These are precisely the same type preferences that distinguished the two cities as a whole. Moreover, the percentage data suggest that although the patterns are not significant, all three city-level type preferences also may have held among professional households, and that among wealthy professionals, the San Franciscans probably reflected their city's preference for beef, although they did not differ clearly from their Oakland counterparts on pork or mutton. In other words, the San Franciscan preference for beef and pork affected people in all occupational categories, as did the Oakland preference for mutton.

Oakland professional households consumed more chicken than did professional households in San Francisco. The percentage data suggest a similar, but not significant, tendency of Oakland wealthy professionals and skilled workers to prefer chicken more than did their counterparts in San Francisco. Unskilled workers deviate from this pattern, but not by much.

Finally, skilled households reflect the same puzzling city-level pattern in which Oaklanders consumed a higher proportion of medium-cost cuts of meat. In the analysis

limited to just skilled households, this pattern is matched by a complementary one in which San Franciscan skilled workers consumed a correspondingly higher proportion of expensive cuts. The percentage data on meat-cut costs among the professional categories in the two cities do not suggest any consistent or intelligible pattern.

The meat type findings reinforce the impression of city-level differences in meat type preferences that apparently cross-cut professional categories. This suggests that these differences are probably to be explained by processes that would have affected people of all professions in the same way, but were distinct in each city, such as the location of the city relative to meat producers and in transportation and trade networks.

OWNERS AND TENANTS IN SAN FRANCISCO VS. THEIR COUNTERPARTS IN OAKLAND

City	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
San Francisco tenants	7	60	25	14	1.7		37	36	27
Oakland tenants	21	53	34	11	2.4		31	40	29
Total tenants:	28	55	32	11	2.2		32	39	29
San Francisco owners	3	50	31	17	2.0		38	34	28
Oakland owners	18	45	37	14	4.6		31	39	30
Total owners:	21	46	36	14	4.2		32	38	30

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Chicken is reported with an additional decimal place to facilitate comparisons.

Comparisons:

Owners in San Francisco vs. Owners in Oakland

Tenants in San Francisco vs. Tenants in Oakland

No significant differences were found.

Interpretations:

Although neither owners nor renters differed significantly from one city to the other, the percentage data follow all of the suggested city-level differences in meat-type preferences and cut costs among both tenants and homeowners in the two cities. While this is not a statistically significant result, it does suggest that these patterns affected

both owners and renters, supporting the impression that they were probably due to city-level processes, perhaps geographic in nature.

ETHNICITIES IN SAN FRANCISCO VS. THEIR COUNTERPARTS IN OAKLAND

City	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
San Francisco German	2	54	25	21	0.7		24	37	38
Oakland German	5	53	28	13	7.1		26	40	34
Total German	7	53	27	15	5.3		26	39	35
San Francisco Irish	4	57	23	17	2.9		27	33	41
Oakland Irish	12	47	41	11	1.9		30	38	32
Total Irish	16	49	37	12	2.1		30	37	34
San Francisco U.S.-born white	3	66	18	15	2.0		31	36	33
Oakland U.S.-born white	12	47	36	14	3.2		32	41	27
Total U.S.-born white	15	50	33	14	2.9		32	40	28

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Chicken is reported with an additional decimal place to facilitate comparisons.

Comparisons:

San Francisco German vs. Oakland German

San Francisco Irish vs. Oakland Irish

San Francisco U.S.-born white vs. Oakland U.S.-born white

Significant Differences (comparisons with at least 10% significance):

City	Variable	Which has more?	Probability	Sig @ 5%	Sig @ 10%
SF US vs. Oakland US	beef	S.F. U.S.-born white	0.0712		X
SF Irish vs. Oakland Irish	mutton	Oakland Irish	0.0249	X	X
SF US vs. Oakland US	mutton	Oakland U.S.-born white	0.0712		X

Interpretations:

Once again, the city-level patterns in meat preferences are reflected in subsets of the cities' populations, in this case subsets by ethnicity. U.S.-born whites in San Francisco ate significantly more beef than did their counterparts in Oakland, and both Irish and U.S.-born whites in Oakland ate more mutton than did their counterparts in San Francisco. The percentage data suggest that these patterns generally held for almost all the type preferences among all three groups, even where the patterns are not significant. There is only one violation of the city-level pattern, among the San Francisco Irish who ate relatively more, rather than less, chicken than did their Oakland counterparts. Germans followed the city-level pattern for beef, and U.S.-born whites for pork, but by such small margins that these cases should not be taken as support for the city-level patterns. Nevertheless, the overall pattern suggests that the city-level meat-type preferences generally cross-cut the ethnic identities within each city.

NEIGHBORHOODS IN SAN FRANCISCO VS. NEIGHBORHOODS IN OAKLAND

Neighborhood	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
Mission Bay - SF	5	63	19	15	3.0		19	33	48
Rincon Hill - SF	9	54	28	16	1.8		41	35	25
San Francisco, all contexts	14	58	24	16	2.2		33	34	33
East of Market - Oakland	17	52	30	13	4.7		36	39	26
West of Market - Oakland	15	44	43	11	2.1		33	40	27
Oakland Point - Oakland	21	52	30	11	2.4		29	40	31
Oakland, all contexts	53	50	34	12	2.9		32	39	28

Table includes commercial properties. Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Chicken is reported with an additional decimal place to facilitate comparisons.

Comparisons:

All pairs of neighborhoods

Significant Differences (comparisons that reached at least 10% significance):

Neighborhood	Variable	Which has more?	Probability	Sig @ 5%	Sig @ 10%
Mission Bay SF vs. E Oak	beef	Mission Bay SF	0.0344	X	X
Mission Bay SF vs. E Oak	mutton	East of Mkt Oak	0.0282	X	X
Mission Bay SF vs. E Oak	high cost	East of Mkt Oak	0.0231	X	X
Mission Bay SF vs. E Oak	low cost	Mission Bay SF	0.0029	X	X
Mission Bay SF vs. W Oak	beef	Mission Bay SF	0.0113	X	X
Mission Bay SF vs. W Oak	mutton	West of Mkt Oak	0.0012	X	X
Mission Bay SF vs. W Oak	low cost	Mission Bay SF	0.0113	X	X
Mission Bay SF vs. Oak Pt	mutton	Oakland Pt, Oak	0.0270	X	X
Mission Bay SF vs. Oak Pt	medium	Oakland Pt, Oak	0.0846		X
Mission Bay SF vs. Oak Pt	low cost	Mission Bay SF	0.0084	X	X
Rincon Hill SF vs. W Oak	mutton	West of Mkt Oak	0.0024	X	X
Rincon Hill SF vs. Oak Pt	high cost	Rincon Hill	0.0198	X	X
Rincon Hill SF vs. Oak Pt	medium	Oakland Pt, Oak	0.0635		X
Within San Francisco:					
Mission Bay vs. Rincon	high cost	Rincon Hill	0.0113	X	X
Mission Bay vs. Rincon	low cost	Mission Bay	0.0076	X	X
Mission Bay vs. Rincon	mutton	Rincon Hill	0.0830		X
Within Oakland:					
West Oak vs. E Oak	mutton	West of Mkt Oak	0.0022	X	X
West Oak vs. Oak Pt	mutton	West of Mkt Oak	0.0043	X	X
All SF vs. all Oakland:					
SF vs. Oakland	beef	SF	0.0568		X
SF vs. Oakland	mutton	Oakland	0.0098	X	X
SF vs. Oakland	pork	SF	0.0800		X
SF vs. Oakland	medium	Oakland	0.0220	X	X

The table below summarizes the comparisons between neighborhoods:

Comparison	Beef	Mutton	Pork	Chicken		Meat-cut Costs		
						High	Medium	Low
Mission Bay vs. East of Market	++	--				--		++
Mission Bay vs. West of Market	++	--						++
Mission Bay vs. Oakland Point		--					-	++
Mission Bay vs. Rincon Hill		-				--		++
Rincon Hill vs. East of Market								
Rincon Hill vs. West of Market		--						
Rincon Hill vs. Oakland Point						++	-	
West of Market vs. East of Market		++						
West of Market vs. Oakland Point		++						
East of Market vs. Oakland Point								
All Oakland vs. all San Francisco	-	++	-				++	

++ indicates that the first neighborhood has more at the 5% confidence level
-- indicates that the first neighborhood has less at the 5% confidence level
- indicates that the first neighborhood has less at the 10% confidence level

Interpretations:

The Rincon Hill and Mission Bay neighborhoods fall at opposite economic extremes in the cost of meat cuts consumed, as shown in the reordered table of mean values below:

Neighborhood	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
Rincon Hill - SF	9	54	28	16	2		41	35	25
East of Market - Oakland	17	52	30	13	5		36	39	26
West of Market - Oakland	15	44	43	11	2		33	40	27
Oakland Point - Oakland	21	52	30	11	2		29	40	31
Mission Bay - SF	5	63	19	15	3		19	33	48

All of the Oakland neighborhoods fall in between these two extremes, clustering closer to the Rincon Hill cost mix, while Mission Bay had a markedly cheaper mix of cuts than any of the others. Rincon Hill has the highest mean percentage of expensive cuts of any of the neighborhoods, and Mission Bay has the lowest. Conversely, Rincon

Hill has the lowest proportion of cheap cuts, and Mission Bay has the highest. These patterns are statistically significant at the 5% level across six of the eight relevant comparisons. Mission Bay had a higher proportion of cheap cuts than any of the other neighborhoods, and it also had a lower proportion of expensive cuts than Rincon Hill and the East of Market neighborhood, all at the 5% confidence level. Rincon Hill had more high-cost cuts and fewer medium-cost cuts than did Oakland Point, but was not significantly different in meat-cut costs from the other two Oakland neighborhoods. In sum, the residents of the Rincon Hill neighborhood consumed the most expensive mix of cuts; people in the three Oakland neighborhoods consumed a slightly cheaper mix of cuts, with Oakland Point residents consuming the cheapest mix in Oakland; and the residents of the Mission Bay neighborhood ate a dramatically cheaper mix than people in any of the other neighborhoods.

Oddly enough, the Mission Bay neighborhood also had a significantly higher proportion of beef than the East of Market and West of Market neighborhoods in Oakland. It seems counterintuitive that the highest proportion of beef, presumably a prized meat, should be found in the San Francisco neighborhood that bought the cheapest mix of cuts. However, the Rincon Hill neighborhood has the second-highest percentage of beef, and does not differ significantly on this from Mission Bay. The lumped comparison of all of San Francisco with all of pre-1890 Oakland also indicates that San Franciscans consumed proportionally more beef than Oaklanders. These patterns together agree with observations made earlier that suggest that a higher preference for beef may be a city-level phenomenon in San Francisco, cross-cutting the neighborhoods within each city. There may be a similar greater city-level preference for pork in San Francisco, but this pattern is significant only in the lumped city comparisons, and only at the 10% confidence level.

Similarly, all of the Oakland neighborhoods have a higher proportion of mutton than does Mission Bay, and the West of Market neighborhood in Oakland has higher proportions of mutton than any other neighborhood in San Francisco or Oakland. Again, the city-level comparison shows that Oakland had a higher percentage of mutton than did San Francisco. As with the beef preference, this difference in type choices shows in both the aggregate and some individual neighborhood patterns. While it appears that the West of Market neighborhood had a greater preference for mutton than did the rest of the Oakland sample, it also appears that Oakland as a whole had a greater preference for mutton than did San Francisco.

While the significance tests across neighborhoods bear out some of the city-level patterns, the percentage data suggest that even in cases that were not statistically significant, every neighborhood in San Francisco differed from every neighborhood in Oakland in the same ways that the cities differed as a whole, with the lone exception that households in Mission Bay consumed more, rather than less, chicken than did households in Oakland Point or West of Market. Aside from that, the city-level type preferences, as well as the puzzling preference for medium-cost cuts in Oakland, cross-cut every neighborhood, affecting households in every neighborhood in the same way.

As noted before, the explanation for these city-level patterns in type preferences should relate at least in part to factors that affected each city as a whole, such as differing transportation routes, meat-distribution systems, or proximity to different kinds of meat-producing areas.

The Rincon Hill neighborhood did not differ significantly from the East of Market neighborhood on any faunal measure, either among costs of cuts or type preferences. While this is not grounds for considering them to be identical, it does suggest that East of Market may have been the Oakland neighborhood most similar to the apparently prosperous Rincon Hill in San Francisco. Conversely, the Oakland Point neighborhood had a significantly lower percentage of high-cost cuts, and more medium-cost cuts, than did Rincon Hill, supporting other indicators that suggest that Oakland Point was the most economically limited of the Oakland neighborhoods.

As noted above and in the analysis of the Cypress Project data, people in the West of Market neighborhood ate a higher proportion of mutton than did people in any other neighborhood. In the Cypress analysis, I suggested that this pattern might be due to the higher percentage of Irish residents in the West of Market neighborhood. The Mission Bay comparison tends to discount this hypothesis. The Mission Bay neighborhood sample is even more heavily Irish (three of the five Mission Bay contexts with meat data), yet it has significantly less mutton than the West of Market neighborhood in Oakland. This is a small sample, but to the extent that these three Irish families can be considered representative, they suggest that Irish heritage may not be the principal explanation for the emphasis on mutton West of Market in Oakland.

To further evaluate the role of Irish ethnicity in differing preferences for mutton, I lumped Irish contexts from both cities and compared them to all other households of known ethnicity in both cities. While the Irish households did average a slightly higher percentage of mutton than the others, as shown below, the probability of the difference occurring by chance was .3556, not even close to significant at any reasonable level. This reinforces the finding that Irish ethnicity is not an important factor in the differing consumption of mutton in the two cities.

Ethnicity	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
Irish, both cities	16	49	37	12	2.1		30	37	34
Known non-Irish, both cities	35	53	30	14	3.6		32	39	30

RESULTS: RELATIVE VALUATION OF MEAT TYPE

In the Cypress analysis, it appeared that beef was the generally preferred meat type, because higher percentages of beef and lower percentages of mutton and pork were served in hotels than in private homes. Hotels were presumably public settings that would have catered to people's preferences, with fewer economic limitations than were placed on meals prepared in private residences. Supporting this assumption was the fact that hotels generally had lower proportions of low-cost cuts than did several categories of private residences.

The San Francisco data, however, seem to contradict this preference ranking of meat type. The Mission Bay neighborhood, with substantially the cheapest mix of meat cuts, also has the highest proportion of beef. On the other hand, as I have noted repeatedly, the type preferences for beef and mutton differ between the two cities.

In hopes of getting a clearer understanding of the relative valuations of meat type, I plotted the percentages of type against the percentages of high- and low-cost cuts. Some correlations of type preferences with high- or low-cost cuts were visually apparent, so I computed the Pearson's correlation coefficients and associated probabilities in order to assess the significance of the patterns. The assumption in this analysis is that if a household could afford more expensive cuts, it could also afford a higher proportion of more highly esteemed meat type. For this reason, a positive correlation of beef and high-cost cuts, for example, would tend to indicate that beef was relatively prized.

CORRELATIONS:

	San Francisco n=17		**Oakland n=68**		**Lumped n=85**	
Comparison:	**Corr?**	**Prob.**	**Corr?**	**Prob.**	**Corr?**	**Prob.**
Beef with High	-	.156				
Beef with Low						
Mutton with High	+	.002**				
Mutton with Low	-	.026**			-	.180
Pork with High			-	.083*	-	.069*
Pork with Low			+	.211	+	.058*
Chicken with High						
Chicken with Low	+	.153				

Table shows only correlations with probability less than .30.
+ indicates positive correlation, - indicates negative correlation.
* indicates 10% confidence level. ** indicates 5% confidence level.

Interpretations:

This approach did not support the preconception that beef was the most preferred meat type, nor the contradictory impression from other analyses that it is associated with cheaper mixes of cuts. In fact, there is little indication that beef preference is related to economic decisions about the cost of cuts at all. The proportion of beef does not seem to be a good indicator of the cost of the meat diet nor, presumably, the general lifestyle cost of the household.

In San Francisco, there is a correlation of more mutton with more high-cost cuts, and a corroborating correlation of less mutton with more low-cost cuts, both significant at the 5% level. This pattern does not appear in Oakland, even weakly. The correlations seem to suggest that mutton was more prized in San Francisco than in Oakland. One possibility is that mutton was harder to get in San Francisco, and thus more available to those with more money to spend on meat. If so, the restricted availability or higher cost of mutton in San Francisco could help to explain the relatively higher proportions of mutton consumed in Oakland.

Pork was probably the least-preferred meat in Oakland by these criteria. The pattern is stronger when the two cities are lumped, indicating that pork also had a low relative value in San Francisco even though the correlation is not strong enough to note in the city's sample by itself. These data suggest that pork consumption should be a weak indicator of consumption of relatively cheap cuts, and so presumably of a generally low-cost lifestyle.

Nevertheless, none of the meat type were distributed among neighborhoods in a way that corresponds to the neighborhood ranking by meat-cut cost. While it may be correct that beef was not strongly preferred, and that pork was valued less than other meats, type preferences do not seem to have been directly tied to the same economic considerations that affected choices about buying more or less expensive cuts. As in the Cypress analysis, it appears that meat-type choices may have been made on grounds largely different from those used in choosing the cost of cuts. The two cities differ considerably in the apparent relative valuation of meat type. This corroborates other analyses in this report that suggest that some of the factors involved in meat-type choice were ones that affected each city as a whole.

PRIVIES VS. WELLS IN FRANCISCO AND OAKLAND COMBINED

Type of feature	Features	Percent Beef	Percent Mutton	Percent Pork	Percent Chicken		Percent Meat-cut Costs		
							High	Medium	Low
Privy, residential only	52	51	32	13	3.2		31	39	29
Well, residential only	3	66	25	8	1.2		48	34	18

Table excludes commercial properties. Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Chicken is reported with an additional decimal place to facilitate comparisons.

Comparisons:

Privies vs. wells

Significant Differences (comparisons that reached at least 10% significance):

Type of Feature	Variable	Which has more?	Probability	Sig @ 5%	Sig @ 10%
Privy vs. well, residential	high	Well	0.0882		X

Interpretations:

No significant differences were found between wells and privies in San Francisco alone, but lumping the features from both cities increases the sample sizes enough to suggest that wells may have accumulated a higher-cost mix of meat cuts than did privies, with significantly more high-cost cuts, albeit with only 10% confidence and no corresponding significant difference in low-cost cuts. This could reflect the economic standing of the three households where the wells were located, since two were in the apparently privileged Rincon Hill neighborhood. It could also reflect idiosyncratic behavior of just a few households that happened to have wells, rather than a general difference between privies and wells.

This result suggests that wells and privies might not be strictly comparable. The question then shifts to the interpretation of this difference, with three general options. First, the differences could be due to genuinely different depositional processes, in which case the assemblages from these two types of features are not comparable samples of behavior and should not be treated as equivalent in analysis. Second, the pattern could be spurious, either as one of the random "significant" results expected by chance or as a historical fluke due to unusual behavior by one or two households. Third, the differences could be due simply to wells being associated with households of higher economic standing, in which case including the wells in the analysis is harmless, and excluding them would introduce a bias by selectively removing high-status households from the sample.

Both the second and the third alternatives are plausible, given the small sample sizes. These alternatives also have the advantage of not requiring any households to be excluded from the analysis, which would reduce the already low sample sizes. The third alternative is possible, but the required response seems severe for a finding that is not very clearly indicated. While this analysis is not particularly reassuring, on balance it still seems best to treat assemblages from privies and wells as equivalent samples of the households that they represent.

STATISTICAL ANALYSIS OF GLASS AND CERAMIC CONTAINERS WITH COMPARISONS TO PRE-1890 OAKLAND

Bruce Owen

SUMMARY OF FINDINGS

The most striking aspect of the San Francisco container data is its strong, consistent, and statistically significant contrast with comparable data from pre-1890 Oakland recovered by the Cypress project. Alcoholic-beverage containers were present at every household in the San Francisco sample, comprising 27% of the total MNI of glass containers, and 26% of the MNI of glass and ceramic containers combined. In the pre-1890 Oakland sample, alcoholic-beverage bottles were found at 55 of the 57 households in the sample, but accounted for only 19% of the total MNI of glass containers, and 22% of the MNI of glass and ceramic containers combined. That is, the glass containers found at San Francisco households included 40% more alcoholic-beverage containers than did those in Oakland, and the combined glass and ceramic containers averaged 20% more alcoholic-beverage containers than in Oakland.

The assemblage of alcoholic-beverage containers in Oakland emphasized beer and ale, with around 5% of the MNI of glass containers and 9% of glass and ceramic containers combined, followed by a comparable proportion of wine bottles at 5% of MNI of both glass and both materials combined, and finally by liquor bottles with about 1% of MNI of glass and both kinds of containers combined. In contrast, the proportions of beer and ale, wine, and liquor containers in the San Francisco container assemblages averaged 1.4 to 2.4 times greater than in Oakland, with beer and ale bottles comprising an average of 12% of the MNI of glass containers and 13% of both materials combined, followed by wine and champagne bottles at 7% of the MNI of glass and both materials combined, and finally by liquor containers, at about 2% of MNI of glass containers and both materials combined. These higher proportions of alcoholic-beverage containers are statistically significant for multiple ways of measuring alcoholic beverages overall, as well as for beer and ale, wine and champagne, and liquor. Assuming that households in the two cities consumed comparable amounts of glass and ceramic containers overall, San Franciscans drank more alcohol in general, more beer and ale, more wine and champagne, and more liquor. And of all those alcoholic-beverage containers, in San Francisco a higher proportion held beer and ale, and possibly a higher proportion held liquor.

The one exception to these overwhelming trends is the greater use in Oakland households of alcoholic beverages packaged in ceramic containers, specifically of beer and ale in ceramic bottles. These comprise well over twice as much of the average container assemblage in Oakland as they do in San Francisco.

San Francisco households consumed a higher proportion of prepared foods packaged in both glass and ceramic containers, while Oakland households may have used more containers for home preservation and storage of food, or may have purchased more foods preserved locally by cottage industry. Oaklanders, and especially those in the Oakland Point neighborhood, also consumed more medicines in general than did San Franciscans, averaging 50% to 80% more of their container assemblages. People in Oakland probably had a greater preference for patent medicines, as opposed to formally prepared medicines in embossed bottles from apothecaries or druggists, than did people in San Francisco. Oddly enough, the households in Oakland Point, the heaviest consumers of medicines in either city, had the least bias towards patent medicines of any Oakland neighborhood, bucking the Oakland trend and generally resembling San Franciscans in the mix of medicines that they used.

The same differences noted in comparisons between the cities as a whole also recur in many different subsets of the data, suggesting that they are city-level trends that crosscut other categories, such as occupation, home ownership or renting, ethnicity, and neighborhood. As such, they resemble the city-level differences in meat species preferences noted in the faunal analysis. These differences generally do not correspond to variables that might indicate socioeconomic status, such as occupation, homeownership, or the purchase of more or less expensive mixes of meat cuts. Instead, the city-level differences between the San Francisco and Oakland samples evidently reflect spatial processes that affected most or all people in each city, such as the cities' positions in transportation networks, proximity to different farming areas and specific production centers, and, possibly, cultural patterns characteristic of each city.

The city-level patterning, however, is not completely uniform across the board. When analysis is limited to each of the four occupation categories, only the professional and skilled households clearly replicate many of the city-level differences between San Francisco and Oakland. This could be because the sample sizes of wealthy professional households and unskilled households in San Francisco are so small, at three and two households, respectively. However, the percentage data suggest that these few households may in fact not follow the city-level patterns as strongly and consistently as the others. It is reasonable to hypothesize that the highest and lowest status households in each city may, for different reasons, have been relatively insulated from the citywide processes that affected the more numerous skilled and professional households.

This hypothesis is further, albeit weakly, supported by comparisons among just homeowners and just tenants. The tenant households replicate many of the city-level differences between San Francisco and Oakland. The smaller group of homeowning households also replicates some of the city-level patterns, but generally at lower or no statistical significance, and they may even reverse the trends for wine and liquor, although not strongly enough to be significant. This reduced response to the city-level processes might be partially explained by the higher proportion of "insulated" households in the homeowning sample, in this case the three wealthy professional households.

Wealthy professionals in San Francisco may have consumed less alcohol in general than did professionals and skilled workers. There may also have been a trend of progressively greater beer consumption with each step down the scale of occupational status. Professionals may have consumed the most wine. The position of unskilled workers' households in these and other patterns is uncertain, in part because there are only two such households in the San Francisco sample. These two unskilled workers' households may have had a preference for beer and ale in ceramic containers, but with an MNI of only 20 of these ceramic bottles, this might reflect a few individual idiosyncrasies or specific purchases, rather than a general pattern by occupational status.

There may have been a tendency for greater use of grooming products with each step up the occupational status scale, and a parallel tendency of households of higher-status occupations to prefer medicines in embossed bottles from druggists or apothecaries over the patent medicines that seem to have been more preferred among the lower-status occupations. Wealthy professionals also may have consumed relatively more food stored in glass containers, either prepared in their own households or locally produced at a cottage-industry level, than did their skilled neighbors, while households of skilled workers consumed more food stored in ceramic containers, also probably prepared either at home or locally at a small scale, than did professional households. A very small sample of six containers hints that wealthy professional and professional households may have purchased more prepared foods packaged in ceramic containers than did their skilled and unskilled neighbors, perhaps expensive or specialty items.

Ethnicity had a minor influence on container use in San Francisco. Germans used more food that was stored in glass containers, either in their own households or by local cottage industry, than did non-Germans. The English households may have had a similar preference, but the small sample size of only two households makes this finding tentative. U.S.-born whites, on the other hand, consumed significantly less food locally stored in glass containers than did all other households combined. The San Francisco samples of individual ethnicities are probably just too small for many patterns to be detected.

Households in single-family dwellings may have purchased more food packaged in ceramic containers than did the various kinds of multifamily households combined, but again, the sample size of only six such containers means that this pattern could reflect a few specific individuals or actions, rather than a broad pattern of behavior. In contrast to the Cypress analysis, there is no significant patterning of alcohol bottles by dwelling type in San Francisco. This may be due to the small sample sizes.

Homeowners may have used more food stored in glass containers, either in their own households or locally produced on a small scale, than did tenants. Tenants, on the other hand, may have emphasized patent medicines over medications in embossed bottles from druggists or apothecaries more than did owners. This generally agrees with the association of patent medicines with lower occupational status noted earlier. Once again, there is no patterning in alcohol overall or in types of alcoholic beverages by tenancy, in contrast to the Cypress analysis. This might be due to the small sample sizes,

or it might reflect differences in the kinds of properties or the nature of ownership in the two cities.

There were only two significant differences between households in the Mission Bay and Rincon Hill neighborhoods, and both involve a higher proportion of ceramic beer and ale bottles in Mission Bay. While this pattern might reflect a consistent difference in behavior between the two neighborhoods, the fact that there is an MNI of only 20 such bottles means that the whole pattern could be the result of purchases for just a few meals or a single salesman's lot.

The type of street that a household fronted on strongly affected both alcohol preferences and food consumption. Households facing onto interior streets consumed roughly the same amount of alcoholic beverages overall as did households facing either numbered or main streets, but of that, relatively less was liquor and more was beer and ale. Households facing interior streets also probably consumed more food packaged in glass, and in glass and ceramic containers combined, than did households on numbered streets. Finally, these same households facing interior streets may have preferred patent medicines over medicines in embossed bottles from druggists or apothecaries more than did households facing main streets, although the pattern is only weakly indicated. Given the container-consumption patterns that appeared to be associated with lower social status in other portions of this analysis, the glass- and ceramic-container data suggest that households facing interior streets fit a lower-status pattern.

Occupation, ethnicity, homeownership versus renting, type of street frontage (in San Francisco), and location in San Francisco or Oakland all had no significant effect on recycling of glass bottles. People who lived in single-family dwellings, however, probably threw away a smaller percentage of whole bottles than did people who lived in multifamily dwellings—that is, they recycled more. Residents of the West of Market neighborhood in Oakland probably recycled less than those in any other neighborhood in either city, although this pattern is significant only for the comparison of the West of Market and East of Market neighborhoods. Since this dubious honor does not correspond to particularly high or low socioeconomic standing by other measures, nor to other patterns in bottle consumption, it is tempting to suspect some spatially specific explanation, such as a relative scarcity of bottle buyers West of Market.

Although the two neighborhoods in San Francisco did not differ much from each other demographically or economically, together they differed from the Oakland neighborhoods in generally the same ways as did the two cities overall. Nevertheless, the city-level differences in wine and liquor consumption were less robust and consistent than were the comparisons of other attributes between neighborhoods, which weakens the impression that these patterns affected all city residents equally. In one of the exceptions to the crosscutting quality of the city-level patterns, households in the West of Market neighborhood seem to have reversed the city-level pattern by using fewer food-storage containers than their neighbors in Oakland or than households in either neighborhood in San Francisco. This contradictory result might point to

something worth pursuing about the West of Market neighborhood, food stored in containers at home or by cottage industry, or both.

The generally greater prevalence of containers from Asia in San Francisco households was most strongly expressed in the Mission Bay neighborhood. Households in the Rincon Hill neighborhood discarded more containers from Asia than did households East of Market, but not than households in the other two Oakland neighborhoods. In Oakland, the use of containers from Asia was lowest in the East of Market neighborhood, and may have been highest in Oakland Point, although the evidence is not clear.

In the analysis of meat-cut data, I suggested a general ranking of neighborhoods based on the mix of meat-cut costs, ranging from the apparently most-prosperous Rincon Hill neighborhood, through the East of Market, West of Market, and Oakland Point neighborhoods, to the markedly less-prosperous Mission Bay neighborhood. Most of the container data do not correspond well with this ranking, as noted above; instead, they seem to reflect city-level patterns. However, containers of grooming products and containers from Asia do fit this economic scale fairly well, with grooming products increasing along with the cost of the meat cuts in the diet, and containers from Asia declining with increasingly expensive mixes of meat cuts. This may suggest that the use of these two kinds of goods was more affected by economic factors, rather than cultural or market differences between the two cities.

The Oakland Point neighborhood, the least prosperous of the Oakland neighborhoods by the meat-cut cost criteria, may have been something of an outlier among the Oakland neighborhoods by many measures. On many, but not all measures, the households of Oakland Point were the most extreme expressions of the differences between Oakland and San Francisco.

The Cypress Project analysis found an association of wine and champagne bottles with higher-paid employment, finer housing, and homeownership. Similar patterns were not significant in San Francisco, perhaps due to small sample sizes, although they were suggested by the percentage data for different occupations. Lumping the occupation categories from San Francisco with those from pre-1890 Oakland to make broad Bay Area samples of each occupation category yielded even stronger patterning in alcoholic-beverage preferences, and stronger support for the association of wine bottles with higher occupational status, than did the Cypress data alone. There is no indication that households in different occupation categories differed in overall consumption of alcoholic beverages. The data do weakly suggest, however, that—from wealthy professionals, through professionals, to skilled workers—the lower the occupational status, the greater the beer consumption. Unskilled workers reverse the trend, although not by much. Professionals consumed more wine, and a higher proportion of wine in their alcohol mix, than did skilled workers and unskilled workers. The percentage data suggest that this pattern of greater wine consumption with higher occupational status applies to all four occupational categories, although wealthy professionals may not differ consistently from professionals.

These lumped occupation categories also suggest a modest trend towards greater use of medicines in general with lower professional status, although the unskilled and skilled households did not differ consistently. Workers in the lower-status occupations may have suffered from more ailments requiring medication, they may have been more inclined to medicate for other reasons, or they may have been more susceptible to marketing of medicines.

Lumping the major ethnicity categories that are represented in both cities suggests that German households in the urban Bay Area may have consumed more medicines in embossed bottles from druggists or apothecaries than did other households, and that these may have comprised a larger proportion of the mix of medicines that they purchased. Germans also purchased relatively fewer writing materials in glass and ceramic containers, mostly ink, than did members of the other ethnic categories. Irish households seem to have consumed the most alcoholic beverages overall, and the most liquor specifically. These same Irish households purchased relatively less prepared food packaged in glass containers or in glass and ceramic containers combined. Unfortunately, the results of the U.S.-born white category are difficult to interpret, because the sample is heavily skewed towards households in Oakland, confounding any possible ethnicity patterning with strong city-level effects.

Unlike the results of the faunal statistical analysis, there were few significant differences in the containers recovered from privies and wells, either in San Francisco or in the entire lumped sample from San Francisco and Oakland. The few differences were mostly in scarce items, or were weakly indicated in the percentage data. Mixing these contexts in analysis should not introduce serious biases.

Lengthy as it is, this analysis is not exhaustive. Additional analyses of this rich database, including comparisons based on constructing different categories of containers, analyses of correlations in the context data, as well as among the containers themselves, along with multivariate statistical approaches, could provide further useful insights.

INTRODUCTION

This report describes results of a search for statistically significant patterning in the distribution of general categories of whole and broken glass and ceramic containers among features divided according to potentially meaningful cultural categories. The container categories analyzed are summarized in the table below.

Category	Variable Name	Includes/Rationale
Whole containers	whole	For glass bottles, this is a reverse index of recycling. The lower the percentage of whole bottles, the more recycling is implied. The meaning for ceramic containers is unclear.
Food	food	Containers of prepared foods, such as mustard, sauces, spices, pickles, soft drinks, etc.
Food storage	fstor	Containers in which food was stored, either by household members or by cottage industry for purchase, such as canning jars, jelly jars, crocks, etc.
Grooming	groom	Containers of products such as perfumes, hair dye, cold cream, Florida water, some pharmaceuticals, etc. Defined as items originally coded as "grooming/health" and neither "patent medicine" nor "drug/apothecary."
Health	health	Containers of patent medicines or "drug/apothecary" products.
Alcohol in general	alcohol	All alcoholic-beverage containers.
Beer and Ale	beer	Beer, Ale, and Ale/Beer containers. Other potentially similar beverages are not included.
Wine and Champagne	wine	Wine, Champagne, and Wine/Champagne containers. Other potentially similar beverages are not included.
Liquor	liquor	Whiskey, Bourbon, Gin, Schnapps, and generic Liquor containers. Other possibly similar beverages and bottles, such as Brandy and Flask, are not included.
Tobacco	tobac	Snuff bottles.
Patent medicine	pat	Containers of named patent medicines.
Drug/apothecary	drug	Embossed containers of pharmaceuticals, medicines, and pills that would be purchased from a formal apothecary. Pharmaceutical bottles that would have had paper labels are not included.
Writing	writing	Ink bottles and a few related items.
Asian	asian	Containers of all types that originated in Asia

The cultural categories are the same as those used in the other statistical analyses. They are summarized under Statistical Analysis Methods above.

The context data used here were provided by Mary Praetzellis in April 2004. The glass- and ceramic-container data were provided by Erica Gibson in April 2004. The comparative data from Oakland are from the Cypress Replacement Project. For this analysis, these data are limited to contexts dating to before 1890, and they include some additions since the Cypress report was prepared.

APPROACH AND METHODS

This analysis follows the general methodology described in the methods section. The section below describes some adjustments to that general methodology to accommodate the container data. The two principal differences have to do with the variables used to quantify the amount of glass and ceramic containers present, and the difficulty of analyzing functionally similar containers made from two different materials that may break and be reused in different ways.

The first difference is in the variables that describe glass and ceramic containers. This analysis, like the others, uses percentage data in order to look at the composition of each feature's assemblage, without considering the relative amounts of glass from each context. However, while the faunal analysis was based simply on percentage data for each "analytical unit" (e.g., "15% of all identifiable meat weight from Feature X was beef"), the glass and ceramic data are more complex because of the troublesome tendency of these materials to exist in two drastically different states: intact, or broken into a large number of pieces. Most artifacts, such as bone, have a more limited and continuous gradation of degrees of breakage. Since one intact bottle was functionally equivalent to a large number of fragments of a similar bottle, characterizing a sample that contains both whole and broken bottles is not straightforward. In order to approach this problem, I created three different measures of each category of containers to be analyzed. Each has its advantages and disadvantages. I ran the same statistical tests on all of them, and I consider all of them in interpreting the results.

First and simplest, I used counts in which each object, whether a whole container or a fragment, counts as a single item. In this approach, wine bottles, for example, are quantified as the total number of whole wine bottles and fragments of wine bottles, divided by the total of all bottle-glass items (whole and fragments) in the feature. This approach has the virtue of simplicity, and it takes into account the entire assemblage, regardless of its degree of breakage. On the other had, it underrepresents any kind of bottle that is unusually prone to be found intact, since these are more often counted as a single item, equivalent to each of the many fragments of a bottle that is broken. It can also create the appearance of differences between originally identical glass assemblages that have been subjected to differing degrees of breakage for pre- or post-depositional reasons. Stronger bottles, which will tend to be intact in protected deposits, will appear to be rare in those deposits, while they will appear to be more numerous in assemblages in which they have been broken. Such differences have no simple relationship to the use

of the bottles before discard, which is what the analysis should ideally assess. Finally, this approach will produce skewed results if some households recycled whole bottles more than did other households. I identified these "percentage of items" variables with a terminal I (for Items), as in winei.

Second, I avoided some of these problems by excluding whole bottles, and working only with fragments. Wine bottles, for example, are quantified simply as the number of fragments of wine bottles, divided by the total number of fragments in the feature, ignoring any whole bottles. This approach should largely eliminate biases due to differential recycling. However, it only partially escapes the breakage problem, since in protected assemblages the whole bottles are not included, while in more broken-up ones, the same bottles have become fragments and are included. In practice, since most of the items recovered were fragments, this measure usually did not differ much from the previous one. Patterns that were significant in "percentage of items" where usually also significant in "percentage of fragments," and vice versa. I identified these "percentage of fragments" variables with a terminal F (for Frags), as in winef.

In the one case of measuring whole bottles as a category, I had to vary the "percentage of total fragments" approach. Whole bottles obviously cannot be excluded from an analysis of whole bottles. In this case, I divided the number of whole bottles by the number of fragments. This is a reasonable index of frequency of whole bottles, but is not strictly speaking a percentage, because the whole bottles are not included in the denominator. In an assemblage with many whole bottles and few fragments, this value could exceed 100%.

Finally, I used the MNI (minimum number of individual bottles) as given in the supplied data. In this approach, wine bottles were quantified as the MNI of wine bottles divided by the total MNI of bottles in the feature. This approach largely escapes the breakage problem, since in theory with a complete sample, a broken bottle would contribute exactly the same single individual to the MNI total as a whole one would. However, when not all fragments of every bottle are recovered, MNI probably underrepresents those bottles that break more or into smaller pieces, or that have fewer individually diagnostic parts than others. That is, a collection containing some pieces of three broken bottles of the same type could well have no duplicates of diagnostic parts, producing an MNI of 1. For this reason, MNI tends to compress the variability in frequency of bottles by understating the number of multiple examples, and this effect will not be equal for bottles with different characteristics and tendencies to break. Nevertheless, the MNI approach is probably the best available approximation of the original bottle assemblage in use, and the errors it introduces are probably generally such that they reduce the differences between assemblages, rather than introducing spurious ones. That is, percentage of MNI is a relatively robust, conservative, but potentially less-sensitive measure than the other two. I identified these "percentage of MNI" variables with a terminal M (for MNI), as in winem.

In order to better capture the variation in alcohol consumption, I also created variables in which the number of items, fragments, or MNI of wine/champagne bottles,

ale/beer bottles, and liquor bottles are divided by the total items, fragments, or MNI of all alcoholic beverage bottles. These measures should reflect preferences in types of alcohol without being obscured by variations in use of other glass containers or variations in total alcoholic-beverage consumption. A large amount of glass was identified as "alcoholic-beverage bottle" with no further detail. These bottles cannot be counted in the wine, beer, or liquor categories, but instead form an "unknown type of alcoholic beverage" category that I did not analyze separately. For this reason, the three identified categories do not sum to 100%. I identified these "percentage of alcoholic-beverage bottle" measures as winealci, winealcf, and winealcm; beeralci, beeralcf, and beeralcm; and liqalci, liqalcf, and liqalcm.

Similarly, in order to capture the relative use of patent medicines versus formally produced medicines in embossed containers purchased from druggists or apothecaries, I created a variable in which the number of items, fragments, or MNI of patent-medicine containers is divided by the combined total of all patent-medicine containers and embossed drug/apothecary medicine containers. This is simply the percentage of identifiable medicine containers that are patent-medicine containers, labeled as patdrugi, patdrugf, and patdrugm.

The second adjustment required by the container dataset results from including artifacts made from both glass and ceramic materials. Whole glass bottles were sometimes sold for reuse or recycling, while whole ceramic containers were not, since it was difficult to tell if they were clean. There may also be differences in the breakability of containers of the two materials, and possibly in their contents, availability, cost, and so on. For these reasons, I ran all the analyses three times: on glass containers alone, on ceramic containers alone, and on glass and ceramic containers together. Assessments of glass-bottle recycling obviously must be based on the glass-only analyses. Other patterns must be assessed for all three datasets.

In order to save space, I report only some of the many values described above. The percentage data tables always include the wholei, wholef, and wholem values for glass only, since these are important for assessing recycling. Other values are reported for all three forms of any variable that shows significant patterning or might be of interest for other reasons.

My approach is to analyze all the measures of each category of interest, since no one of them is ideal. The MNI variables, as the most conservative, should carry the most weight in interpretations. When all three measures of the same category are found to have significant patterning, the pattern seems more strongly supported. When only one or both of the non-MNI variables are significantly patterned, the pattern may be due to one or more of the confounding factors discussed above, or it may be real, but not strong enough to overcome the damping-out quality of the MNI measure.

Similarly, I consider how any pattern presents itself in the three sets of container materials: glass, ceramic, and both. If a pattern holds for all three material groups, it is most strongly supported. If it holds for glass containers as well as for glass and ceramic

containers combined, it is still well supported. This is because the sample of ceramic containers is much smaller than the sample of glass containers, and is considerably more limited in types of containers. Many comparisons cannot be run at all on ceramic containers alone, because one or both of the feature categories has no ceramic example of the artifact type. For this reason, the ceramic dataset is expected to produce many fewer significant contrasts than the glass dataset. However, if a pattern is significant among glass containers, but ceases to be significant when ceramic containers are added into the analysis that should raise doubts about the pattern. It may be a fluke that is corrected when the sample is increased by adding ceramic containers. Alternatively, the pattern may be real in the glass artifacts, but contradicted by an opposing real pattern in the ceramic containers. In that case, there might be some interesting explanation for the difference between seemingly similar containers made of the two different materials. It is also possible that a real pattern in the glass is contradicted by a spurious one in the ceramics. Finally, some patterns may be significant only in the combined dataset. These patterns may be too weak, or represented by sample sizes too small, to be detected without the additional ceramic examples.

The statistics were run on SAS software, using SAS instructions in the programs CSCONTG5.SAS and CSCONTA5.SAS, container data from CSCONT1.DBF, and context data from CSCTX4.DBF. The programs are text files that can be viewed using any word processor, and the data files can be viewed directly by Excel or most database programs.

The table below provides a complete list of container variables analyzed. Each was calculated three ways: for the glass-container assemblage only, the ceramic-container assemblage only, and glass and ceramic containers together.

CONTAINER VARIABLES ANALYZED

Variable Name	Meaning
Wholei	Whole containers / total items (whole+frags)
Wholef	Whole containers / total fragments
Wholem	Whole containers / total MNI
Foodi	Food containers (whole+frags) / total items (whole+frags)
Foodf	Food container fragments / total fragments
Foodm	Food container MNI / total MNI
Fstori	Food-storage containers (whole+frags) / total items (whole+frags)
Fstorf	Food-storage container fragments / total fragments
Fstorm	Food-storage container MNI / total MNI
Groomi	Grooming/health containers neither patent medicines or drug/apothecary (whole+frags) / total items (whole+frags)

Container Variables Analyzed *(continued)*

Variable Name	Meaning
Groomf	Grooming/health containers neither patent medicines or drug/apothecary fragments / total fragments
Groomm	Grooming/health containers neither patent medicines or drug/apothecary MNI / total MNI
Healthi	Patent medicine or drug/apothecary containers (whole+frags) / total items (whole+frags)
Healthf	Patent medicine or drug/apothecary container fragments / total fragments
healthm	Patent medicine or drug/apothecary container MNI / total MNI
alcoholi	Alcoholic-beverage containers (whole+frags) / total items (whole+frags)
alcoholf	Alcoholic-beverage container fragments / total fragments
alcoholm	Alcoholic-beverage container MNI / total MNI
beeri	Beer and/or ale containers (whole+frags) / total items (whole+frags)
beerf	Beer and/or ale container fragments / total fragments
beerm	Beer and/or ale container MNI / total MNI
winei	Wine and/or champagne containers (whole+frags) / total items (whole+frags)
winef	Wine and/or champagne container fragments / total fragments
winem	Wine and/or champagne container MNI / total MNI
liquori	Hard-liquor containers (whole+frags) / total items (whole+frags)
liquorf	Hard-liquor container fragments / total fragments
liquorm	Hard-liquor container MNI / total MNI
beeralci	Beer and/or ale containers (whole+frags) / alcoholic beverage containers (whole+frags)
beeralcf	Beer and/or ale container fragments / alcoholic beverage container fragments
beeralcm	Beer and/or ale container MNI / alcoholic beverage container MNI
winealci	Wine and/or champagne containers (whole+frags) / alc. bev. containers (whole+frags)
winealcf	Wine and/or champagne container fragments / alcoholic beverage container fragments
winealcm	Wine and/or champagne container MNI / alcoholic beverage container MNI
liqalci	Hard-liquor containers (whole+frags) alcoholic beverage containers (whole+frags)
liqalcf	Hard-liquor container fragments alcoholic beverage container fragments
liqalcm	Hard-liquor container MNI / alcoholic beverage container MNI
tobaci	Snuff containers (whole+frags) / total items (whole+frags)
tobacf	Snuff container fragments / total fragments

Container Variables Analyzed *(continued)*

Variable Name	Meaning
tobacm	Snuff container MNI / total MNI
pati	Patent medicine containers (whole+frags) / total items (whole+frags)
patf	Patent medicine container fragments / total fragments
patm	Patent medicine container MNI / total MNI
drugi	Embossed drug/apothecary containers (whole+frags) / total items (whole+frags)
drugf	Embossed drug/apothecary container fragments / total fragments
drugm	Embossed drug/apothecary container MNI / total MNI
patdrugi	Patent-medicine containers (whole+frags) / health items (whole+frags)
patdrugf	Patent-medicine container fragments / health fragments
patdrugm	Patent-medicine container MNI / health MNI
writingi	Writing-ink containers (whole+frags) / total items (whole+frags)
writingf	Writing-ink container fragments / total fragments
writingm	Writing-ink container MNI / total MNI
asiai	Containers from Asia (whole+frags) / total items (whole+frags)
asiaf	Containers from Asia fragments / total fragments
asiam	Containers from Asia MNI / total MNI

Number of Items in Each Artifact Category in the Entire Sample of Features:

Artifact Category (not divided by totals):	San Francisco			Oakland		
	Glass	Ceramic	Both	Glass	Ceramic	Both
Features	18	14	18	57	50	57
all MNI	2058	117	2175	2558	319	2877
all whole	542	20	562	739	46	785
all frag	13476	285	13761	13480	1953	15433
all items	14018	305	14323	14219	1999	16218
alcoholi	7675	62	7737	4652	968	5620
alcoholf	7508	58	7566	4582	942	5524
alcoholm	691	20	711	507	200	707
beeri	2060	62	2122	867	966	1833
beerf	1950	58	2008	831	940	1771

Number of Items in Each Artifact Category *(continued)*

Artifact Category (not divided by totals):	San Francisco			Oakland		
	Glass	Ceramic	Both	Glass	Ceramic	Both
beerm	404	20	424	128	199	327
winei	1378	0	1378	1710	0	1710
winef	1358	0	1358	1687	0	1687
winem	131	0	131	182	0	182
liquori	678	0	678	247	2	249
liquorf	657	0	657	244	2	246
liquorm	71	0	71	26	1	27
pati	399	0	399	1135	0	1135
patf	357	0	357	1028	0	1028
patm	104	0	104	242	0	242
drugi	56	0	56	387	0	387
drugf	48	0	48	360	0	360
drugm	19	0	19	64	0	64
writingi	54	2	56	105	22	127
writingf	36	0	36	70	17	87
writingm	31	2	33	51	11	62
groomi	942	14	956	990	46	1036
groomf	795	13	808	766	43	809
groomm	308	3	311	388	9	397
healthi	455	0	455	1521	0	1521
healthf	405	0	405	1388	0	1388
healthm	123	0	123	305	0	305
foodi	2445	12	2457	2533	27	2560
foodf	2358	12	2370	2466	27	2493
foodm	380	6	386	353	5	358
fstori	76	93	169	1337	533	1870
fstorf	73	93	166	1337	533	1870
fstorm	19	30	49	103	43	146
tobaci	8	0	8	28	0	28
tobacf	0	0	0	13	0	13

Number of Items in Each Artifact Category *(continued)*

Artifact Category (not divided by totals):	San Francisco			Oakland		
	Glass	Ceramic	Both	Glass	Ceramic	Both
tobacm	8	0	8	17	0	17
asiai	0	65	65	0	215	215
asiaf	0	65	65	0	215	215
asiam	0	17	17	0	11	11

As noted in the method section, significant patterns based on small numbers of items should be assessed with caution, since a few idiosyncratic individuals or actions might account for the pattern, rather than any broad tendencies of the household categories being compared. Comparisons of subsets of features (for example, professional vs.. skilled households) will involve even smaller numbers of items, since some of the items will generally be in features that are not included in the comparison. For example, patterns in the distribution of grooming products or of prepared foods in ceramic containers (MNI = 3 and 6 in the entire San Francisco sample, respectively) should be interpreted with caution. As a rule of thumb, analyses of items with MNI below 25 should probably be evaluated with extra caution. Sample sizes in the glass and combined container datasets are probably sufficient to minimize this interpretive problem except among tobacco (snuff) containers, embossed medicine bottles from druggists, and containers from Asia in comparisons that include most of the San Francisco households. In comparisons of specifically ceramic items, patterns in the distribution of the following categories should be handled cautiously in light of the small number of items that comprise them: whole ceramic containers, ceramic alcoholic beverage containers, ceramic beer bottles (all largely the same items), ceramic containers related to writing or grooming, ceramic containers of prepared foods, and ceramic containers from Asia. Comparisons that involve just a few households in each category, rather than a subset versus all others, may reduce the item count of additional kinds of artifacts to levels where the patterns may become suspect. Items that should be interpreted cautiously in subsets of the San Francisco households include all those already mentioned, plus glass and combined writing containers and glass and combined food storage containers.

RESULTS

OCCUPATION (SF-80 AND WBA ONLY)

Occupation Category	n	wholei glass	wholef glass	wholem glass	n	alcoholi glass	alcoholf glass	alcoholm glass
P+ (wealthy prof.)	3	7	8	27	3	27	29	17
P (professional)	3	2	3	16	3	39	40	28
S (skilled)	9	6	7	26	9	43	44	32
U (unskilled)	2	14	18	25	2	23	23	18
Total:	17	7	8	24	17	37	38	27

Ocupation Category	n	alcoholi ceram	alcoholf ceram	alcoholm ceram	n	alcoholi both	alcoholf both	alcoholm both
P+ (wealthy prof.)	2	15	7	17	3	26	28	17
P (professional)	2	0	0	0	3	39	40	27
S (skilled)	7	15	11	12	9	43	44	32
U (unskilled)	2	48	50	42	2	27	28	19
Total:	13	17	15	15	17	37	38	27

Ocupation Category	n	beeri glass	beerf glass	beerm glass	n	beeri ceram	beerf ceram	beerm ceram
P+ (wealthy prof.)	3	9	9	4	2	15	7	17
P (professional)	3	12	12	10	2	0	0	0
S (skilled)	9	16	16	17	7	15	11	12
U (unskilled)	2	9	9	8	2	48	50	42
Total:	17	13	13	13	13	17	15	15

Ocupation Category	n	beeri both	beerf both	beerm both	n	beeralci both	beeralcf both	beeralcm both
P+ (wealthy prof.)	3	8	8	5	3	28	28	27
P (professional)	3	12	12	10	3	31	31	32
S (skilled)	9	16	16	17	9	41	40	51
U (unskilled)	2	13	14	10	2	48	52	53
Total:	17	14	14	13	17	38	38	44

Occupation *(continued)*

Ocupation Category	n	winei both	winef both	winem both	n	foodi glass	foodf glass	foodm glass
P+ (wealthy prof.)	3	7	7	3	3	17	16	17
P (professional)	3	17	18	10	3	35	36	28
S (skilled)	9	10	11	7	9	18	18	17
U (unskilled)	2	7	7	4	2	18	15	20
Total:	17	10	11	6	17	21	20	19

Ocupation Category	n	foodi ceram	foodf ceram	foodm ceram	n	foodi both	foodf both	foodm both
P+ (wealthy prof.)	2	7	9	9	3	17	16	16
P (professional)	2	36	42	17	3	35	36	27
S (skilled)	7	0	0	1	9	17	18	16
U (unskilled)	2	0	0	0	2	17	15	18
Total:	13	7	8	5	17	20	20	18

Ocupation Category	n	fstori glass	fstorf glass	fstorm glass	n	fstori ceram	fstorf ceram	fstorm ceram
P+ (wealthy prof.)	3	2	1	5	2	16	17	16
P (professional)	3	1	1	3	2	0	0	0
S (skilled)	9	1	1	1	7	34	47	33
U (unskilled)	2	2	2	2	2	17	20	17
Total:	17	1	1	2	13	24	31	23

Ocupation Category	n	fstori both	fstorf both	fstorm both	n	groomi glass	groomf glass	groomm glass
P+ (wealthy prof.)	3	3	2	6	3	12	10	24
P (professional)	3	1	1	3	3	6	6	12
S (skilled)	9	2	2	3	9	13	12	15
U (unskilled)	2	2	2	3	2	2	0	3
Total:	17	2	2	3	17	10	9	15

Occupation *(continued)*

Ocupation Category	n	groomi both	groomf both	groomm both	n	patdrugi glass	patdrugf glass	patdrugm glass
P+ (wealthy prof.)	3	12	10	22	3	66	63	83
P (professional)	3	6	6	12	3	98	99	95
S (skilled)	9	13	12	14	9	92	93	85
U (unskilled)	2	1	0	3	2	100	100	100
Total:	17	10	9	14	17	90	89	89

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

All pairs of occupation categories

Wealthy (P+) vs. all others (P,S,U)

Wealthy (P+) vs. Middle (P,S)

Middle (P,S) vs. Unskilled (U)

Middle (P,S) vs. Extremes (U,P+)

Upper (P+,P) vs. Lower (S, U)

Any skill (P+,P,S) vs. Unskilled (U)

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Occupation Comparisons:	Variable	Material	Which has more?	Prob.	Sig @ 5%
Wealthy Prof vs. Skilled	alcoholm	glass	Skilled	0.0955	
Wealthy Prof vs. Prof & Skilled	alcoholi	both	Prof & Skilled	0.0969	
Wealthy Prof vs. Prof & Skilled	alcoholm	glass	Prof & Skilled	0.0966	
Wealthy Prof vs. Prof & Skilled	alcoholm	both	Prof & Skilled	0.0969	
Prof & Skilled vs. Unskilled	alcoholf	ceram	Unskilled	0.0539	
Skilled vs. Unskilled	alcoholf	ceram	Unskilled	0.0926	
Wealthy Prof. vs. Professional	winem	both	Professional	0.0809	
Wealthy Professional vs. Skilled	beerm	glass	Skilled	0.0961	
Wealthy Professional vs. Skilled	beerm	both	Skilled	0.0961	

Significant Differences: ***(continued)***

Occupation Comparisons:	Variable	Material	Which has more?	Prob.	Sig @ 5%
Wealthy & Prof vs. Skill & Unsk.	beeralcm	both	Skilled & Unsk	0.0668	
Skilled vs. Unskilled	beerf	ceram	Unskilled	0.0926	
Prof & Skilled vs. Unskilled	beerf	ceram	Unskilled	0.0539	
Wealthy & Unskilled vs. P & S	alcoholf	glass	Prof & Skilled	0.0820	
Wealthy & Unskilled vs. P & S	alcoholf	both	Prof & Skilled	0.0651	
Wealthy & Unskilled vs. P & S	alcoholi	glass	Prof & Skilled	0.0651	
Wealthy & Unskilled vs. P & S	alcoholi	both	Prof & Skilled	0.0512	
Wealthy & Unskilled vs. P & S	alcoholm	glass	Prof & Skilled	0.0818	
Wealthy & Unskilled vs. P & S	alcoholm	both	Prof & Skilled	0.0820	
Wealthy & Unskilled vs. P & S	alcoholf	ceram	Wealthy & Unsk	0.0620	
Wealthy & Unskilled vs. P & S	alcoholi	ceram	Wealthy & Unsk	0.0956	
Wealthy & Unskilled vs. P & S	alcoholm	ceram	Wealthy & Unsk	0.0956	
Wealthy & Unskilled vs. P & S	beerf	ceram	Wealthy & Unsk	0.0620	
Wealthy & Unskilled vs. P & S	beeri	ceram	Wealthy & Unsk	0.0956	
Wealthy & Unskilled vs. P & S	beerm	ceram	Wealthy & Unsk	0.0956	
Wealthy & Unskilled vs. P & S	beerm	glass	Prof & Skilled	0.0818	
Wealthy Professional vs. Skilled	foodi	ceram	Wealthy Prof	0.0238	X
Wealthy Professional vs. Skilled	foodf	ceram	Wealthy Prof	0.0238	X
Wealthy Professional vs. Skilled	foodm	ceram	Wealthy Prof	0.0557	
Wealthy Professional vs. Skilled	fstori	glass	Wealthy Prof	0.0903	
Professional vs. Skilled	fstori	ceram	Skilled	0.0560	
Professional vs. Skilled	fstorf	ceram	Skilled	0.0560	
Professional vs. Skilled	fstorm	ceram	Skilled	0.0560	
Wealthy Professional vs. Skilled	groomm	glass	Wealthy Prof	0.0961	
Wealthy Professional vs. Skilled	groomm	both	Wealthy Prof	0.0961	
Skilled vs. Unskilled	groomf	glass	Skilled	0.0982	
Skilled vs. Unskilled	groomf	both	Skilled	0.0982	
Any grade of skill vs. Unskilled	groomf	glass	Any skill	0.0857	
Any grade of skill vs. Unskilled	groomf	both	Any skill	0.0857	
Wealthy Professional vs. Skilled	patdrugi	glass	Skilled	0.0799	
Wealthy Professional vs. P & S	patdrugf	glass	Prof & Skilled	0.0704	

Significant Differences: ***(continued)***

Occupation Comparisons:	Variable	Material	Which has more?	Prob.	Sig @ 5%
Wealthy Professional vs. P & S	patdrugi	glass	Prof & Skilled	0.0583	
Wealthy Professional vs. all other	patdrugf	glass	Others	0.0583	
Wealthy Professional vs. all other	patdrugi	glass	Others	0.0406	X

Interpretations:

There is no significant pattern in recycling by profession in San Francisco.

Wealthy professionals probably consumed less alcohol in general than did skilled workers and professionals, although the pattern holds only for some of the possible measures and only with 10% confidence. Unskilled workers probably consumed more alcohol in ceramic containers (but not in glass) than did skilled workers as well as skilled workers and professionals combined. This pattern appears strongly in the percentage data for all three measures, but it is significant only for the "percent of fragments" measure and only at 10% confidence, probably because the sample size of unskilled households is only two. In addition, there are only 20 ceramic alcoholic-beverage containers in the entire San Francisco assemblage, so this pattern could have been created by just a few purchases.

There is a parallel trend, albeit only on some measures and only at the 10% confidence level, of greater beer and ale consumption among lower-status workers. Skilled workers drank more beer than did wealthy professionals by the MNI measure for both glass and for the two materials combined; skilled and unskilled workers as a group drank more of their alcohol in the form of beer than did wealthy professionals and professionals as a group, by the MNI measure for both materials combined; and unskilled workers drank more beer in ceramic containers than did skilled workers or professional and skilled workers combined. Again, this preference among unskilled households for beer in ceramic containers is strong in the percentage data, but—probably due to the very small sample of unskilled households—is significant only for the "percent of fragments" measure. The implication of both the percentage data and the significance tests is that beer in ceramic containers was the lowest-status choice, perhaps the cheapest; beer in glass containers was the next step up; and non-beer forms of alcohol were increasingly preferred in higher-status households. Alternatively, as noted above, the patterning in ceramic containers might be virtually accidental, due simply to a few specific buying decisions involving the small number of ceramic beer bottles.

The percentage data suggest that professionals, the second-highest status group, may have consumed the most wine. The robust "percent of MNI" measure for glass and ceramic containers combined bears that out, with professions consuming significantly more wine than did wealthy professionals, albeit only at the 10% confidence level.

In the Cypress Project analysis, wealthy professional households in some ways resembled unskilled households, such that the two extreme occupation categories

combined would contrast significantly with the two intermediate occupation categories. This counterintuitive pattern also appears in the San Francisco data. The wealthy professional and the unskilled households as a group consumed significantly less alcohol than did the skilled and professional households on all three measures for both glass containers and combined glass and ceramic containers, with 10% confidence on all six measures. The pattern, however, is exactly the opposite for ceramic containers, with the wealthy and unskilled group consuming more alcohol in general, and more beer and ale in particular, in ceramic containers than the skilled and professional group. This may be due to the preference for beer and ale in ceramic containers among the unskilled households noted above, rather than any strong tendency among the wealthy households. Again, it might also be an artifact of the small number of ceramic beer bottles overall.

The percentage data suggest that professional and wealthy professionals' households purchased more prepared foods in ceramic containers than did skilled and unskilled households. Probably due to the small sample sizes, this pattern is significant only for wealthy professional households compared to skilled households, by all three measures, two at 5% confidenceThis pattern, however, is weaker in the percentage data for glass containers and among all containers combined, and it is not significant for any comparisons, suggesting that it was specifically prepared foods in ceramic containers that were most differentially preferred by the higher-status households. Since there are only six of these ceramic food containers by MNI in the whole San Francisco collection, one should be cautious in attributing too much meaning to the pattern in their distribution.

Wealthy professionals also may have consumed relatively more food stored in glass, either prepared in their own households or locally produced at a cottage-industry level, than did their skilled neighbors, although this pattern is significant only for the "percent of items" measure at 10% confidence. Households of skilled workers consumed more food stored in ceramic containers, also probably prepared either at home or locally at a small scale, than did professional households, by all three measures. Again, this pattern is limited to the 39 ceramic food-storage containers in the entire sample, not glass or both combined, suggesting a preference for some specific category or categories of food preserved in ceramic vessels, or perhaps an unimportant pattern in the small number of such items.

Another weakly supported trend suggests greater use of grooming products with higher-status employment. Wealthy professionals used more grooming products than did skilled workers by the robust MNI measure for both glass containers and glass and ceramic containers combined, with 10% confidence. Skilled workers used more grooming products than did unskilled workers by the less-convincing "percent of fragments" measure for both glass and combined glass and ceramic containers, also with 10% confidence.

Finally, there is a consistent pattern of wealthy professionals preferring formally produced medicines in embossed containers purchased from druggists or apothecaries

over patent medicines, compared to skilled workers, skilled workers and professionals combined, and all others combined. This pattern is significant at the 10% level for various combinations of "percent of items" and "percent of fragments" measures of the fraction of medicine containers that held patent medicines, and at 5% confidence for one such measure. The trend is also clear in the percentage data, with wealthy professionals having the smallest proportion of patent-medicine containers among their medicinal bottles, professionals and skilled workers having higher proportions of patent medicines, and the two unskilled households having exclusively patent medicines and nothing definitely from a druggist or apothecary's shop. Since all medicines were packaged in glass, only glass measures are relevant here.

ETHNICITY (SF-80 AND WBA ONLY)

Ethnicity	n	wholei glass	wholef glass	wholem glass	n	fstori glass	fstorf glass	fstorm glass
English	2	9	10	33	2	3	2	7
German	4	3	3	15	4	2	2	5
Irish	6	8	10	25	6	1	1	1
U.S. white	3	2	3	15	3	0	0	0
Total:	15	6	7	21	15	1	1	3

Ethnicity	n	writingi ceram	writingf ceram	writingm ceram	n	groomi ceram	groomf ceram	groomm ceram
English	1	13.3	0.0	14.3	1	0	0	0
German	2	0.0	0.0	0.0	2	26	1	28
Irish	5	0.0	0.0	0.0	5	4	4	2
U.S. white	3	0.0	0.0	0.0	3	0	0	0
Total:	11	1.2	0.0	1.3	11	7	2	6

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

All pairs of common ethnicities

Each of the four common ethnicities vs. the other three lumped together

Each of the four common ethnicities vs. all the others lumped together, including mixed ones (not listed in the table above)

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Ethnicity	Variable	Material	Which has more?	Prob.	Sig @ 5%
German vs. U.S. white	fstori	glass	German	0.0436	X
German vs. U.S. white	fstorf	glass	German	0.0436	X
German vs. U.S. white	fstorm	glass	German	0.0436	X
German vs. all others	fstorm	glass	German	0.0454	X
German vs. all others	fstorm	both	German	0.0791	
U.S. white vs. all others	fstori	glass	Other	0.0347	X
U.S. white vs. all others	fstorf	glass	Other	0.0347	X
U.S. white vs. all others	fstorm	glass	Other	0.0347	X
German vs. all others	groomi	ceram	German	0.0076	X
German vs. all others	groomm	ceram	German	0.0076	X
English vs. Irish	writingi	ceram	English	0.0736	
English vs. Irish	writingm	ceram	English	0.0736	
English vs. all others	writingi	ceram	English	0.0009	X
English vs. all others	writingm	ceram	English	0.0009	X

"All others" categories include households of mixed ethnicity.

Interpretations:

There was no significant patterning by ethnicity in recycling (whole bottles), nor in any aspect of alcohol consumption.

Germans used more food that was stored in glass in the home or by presumably local cottage industry than did U.S.-born whites, with 5% confidence on all three measures, and more than all non-Germans combined by the robust MNI measure, also with 5% confidence. The percentage data suggest that the two English households had a similar or even greater preference for food locally stored in glass, but the small sample size probably prevents the English pattern from proving significant. At the opposite extreme, U.S.-born white households consumed significantly less food locally stored in glass containers than did all other households combined, with 5% confidence on all three measures.

Germans also differed from all others as a group in using more grooming products packed in ceramic containers, on two measures including percent of MNI, both at the 5% level. Since there are only three such containers in the entire San Francisco collection, this finding could be a statistical fluke or the result of particular idiosyncrasies of just one or two German individuals. The same is even more true of the significant patterning

in ceramic containers associated with writing, of which there are only two in the San Francisco assemblage.

Some weak patterning by ethnicity was detected in the Cypress analysis. The San Francisco sample is probably just too small for similar patterns to be detected.

DWELLING TYPE (SF-80 AND WBA ONLY)

Dwelling Categories:

Dwelling	n	wholei glass	wholef glass	wholem glass	n	foodi ceram	foodf ceram	foodm ceram
Commercial w/ lodging	1	6	6	34	1	0	0	0
Lodgings	1	24	32	32	1	0	0	0
Multifamily	3	9	11	33	3	0	0	0
Single family	12	5	5	21	9	12	13	8
Unknown	1	0	0	0	0	0	0	0
Total:	18	6	7	23	14	7	9	5

Dwelling	n	groomi ceram	groomf ceram	groomm ceram
Commercial w/ lodging	1	50	0	50
Lodgings	1	0	0	0
Multifamily	3	0	0	0
Single family	9	2	3	2
Unknown	0	0	0	0
Total:	14	5	2	5

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

All pairs

Single family vs. all others except commercial

Single family vs. all others, including commercial

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Dwelling types:	Variable	Material	Which has more?	Prob.	Sig @ 5%
Single family vs. Multi & Lodging	wholei	glass	Multifamily	0.0787	
Single family vs. Multi & Lodging	wholef	glass	Multifamily	0.0787	
Single family vs. Multi & Lodging	foodi	ceram	Single family	0.0947	
Single family vs. Multi & Lodging	foodf	ceram	Single family	0.0947	
Single family vs. Multi & Lodging	foodm	ceram	Single family	0.0947	
Single family vs. Com. w/ lodging	groomi	ceram	Com. w/ lodging	0.0866	
Single family vs. Com. w/ lodging	groomm	ceram	Com. w/ lodging	0.0866	

Interpretations:

People living in single-family dwellings probably threw away a smaller percentage of whole bottles than did people living in multifamily dwellings, that is, they recycled more. This pattern is significant at the 10% level for both the "percent of items" and "percent of fragments" measures. The same pattern is weakly suggested in the percentage data for the more robust "percent of MNI" measure, but it is not significant.

Single-family households may have purchased more food packaged in ceramic containers than did the various kinds of multifamily households combined. Again, the sample size of only six such containers from San Francisco means that this pattern could reflect a few specific individuals or actions, rather than a broad pattern of behavior. As noted earlier, the same is true for the apparent pattern in the distribution of the three ceramic containers of grooming products.

Interestingly, there is no significant patterning of alcohol bottles by dwelling type in San Francisco. Again, this contrasts with the Cypress analysis, and may be due to the small sample sizes. In addition, the historical documentation of dwelling types in San Francisco is not as precise as it is for the Cypress Project, so some of the patterning observed in Oakland cannot be evaluated in San Francisco.

TENANCY (SF-80 AND WBA ONLY)

Tenure Type	n	wholei glass	wholef glass	wholem glass	n	fstori glass	fstorf glass	fstorm glass
O (Owner)	5	7	8	21	5	2	1	4
T (Tenant)	7	9	10	27	7	1	1	0
Unknown	5	3	3	18	5	2	2	3
Total:	17	6	7	23	17	1	1	2

Tenure Type	n	patdrugi glass	patdrugi glass	patdrugi glass
O (Owner)	5	66	63	83
T (Tenant)	7	93	92	88
Unknown	5	91	98	87
Total:	17	88	90	87

Table excludes commercial properties. Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

Owner (O) vs. Tenant (T)

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Tenure Type	Variable	Material	Which has more?	Prob.	Sig @ 5%
Owner (O) vs. Tenant (T)	fstori	glass	Owner	0.0996	
Owner (O) vs. Tenant (T)	fstorm	glass	Owner	0.0996	
Owner (O) vs. Tenant (T)	patdrugi	glass	Tenant	0.0777	

All tenure comparisons exclude commercial properties.

Interpretations:

There was no significant patterning by tenancy in recycling (whole bottles), nor in any aspect of alcohol consumption.

Owners may have used more food stored in glass, either in their own households or locally produced on a small scale, than did tenants. This pattern holds for two measures, including the percent of MNI measure, but only at the 10% confidence level.

Tenants may have emphasized patent medicines over medications in embossed bottles from druggists or apothecaries more than did owners. This pattern is fairly marked in the percentage data, but is significant only for the less convincing "percent of items" measure, and only with 10% confidence.

NEIGHBORHOOD (SF-80 AND WBA ONLY)

Neighborhood	n	wholei glass	wholef glass	wholem glass	n	beeri ceram	beerf ceram	beerm ceram
Mission Bay	8	7	8	21	6	28	29	24
Rincon Hill	10	6	7	25	8	8	3	9
Total:	18	6	7	23	14	17	14	17

Neighborhood	n	alcoholi ceram	alcoholf ceram	alcoholm ceram
Mission Bay	6	28	29	24
Rincon Hill	8	8	3	9
Total:	14	17	14	15

Table includes commercial properties. Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

Mission Bay vs. Rincon Hill

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Neighborhood	Variable	Material	Which has more?	Prob.	Sig @ 5%
Mission Bay vs. Rincon Hill	alcoholf	ceram	Mission Bay	0.0807	
Mission Bay vs. Rincon Hill	beerf	ceram	Mission Bay	0.0807	

Interpretations:

There was no significant patterning by neighborhood within San Francisco in recycling (whole bottles), nor in most aspects of alcohol consumption. The one exception may be atendency for Mission Bay households to consume more alcohol, specifically beer, in ceramic containers. This difference looks strong in the percentage data, but is

only significant by the "percent of fragments" measure with 10% confidence. In addition, the total number of ceramic beer bottles is only 20 by MNI, so the entire pattern could be accounted for the purchases for a few meals or a single salesman's lot. This pattern should probably be taken as tentative.

STREET FRONTAGE TYPE (SF-80 AND WBA ONLY)

Street Frontage	n	wholei glass	wholef glass	wholem glass	n	patdrugi glass	patdrugf glass	patdrug m glass
Interior	11	5	6	20	11	90	95	86
Main	4	6	7	26	4	77	63	89
Numbered	3	11	14	32	3	97	98	90
Total:	18	6	7	23	18	89	90	87

Street Frontage	n	liquori glass	liquorf glass	liquorm glass	n	liquori both	liquorf both	liquorm both
Interior	11	1	1	1	11	1	1	1
Main	4	4	4	4	4	4	4	3
Numbered	3	6	5	5	3	6	5	5
Total:	18	2	2	2	18	2	2	2

Street Frontage	n	liqalci glass	liqalcf glass	liqalcm glass	n	liqalci both	liqalcf both	liqalcm both
Interior	11	1	1	3	11	1	1	3
Main	4	13	13	18	4	13	13	16
Numbered	3	17	8	27	3	13	8	19
Total:	18	7	5	10	18	6	5	8

Street Frontage	n	beeralci glass	beeralcf glass	beeralcm glass	n	alcoholi both	alcoholf both	alcoholm both
Interior	11	38	38	43	11	38	39	27
Main	4	34	34	30	4	32	33	20
Numbered	3	10	9	30	3	47	49	33
Total:	18	33	32	38	18	38	39	26

Street Frontage Type *(continued)*

Street Frontage	n	foodi glass	foodf glass	foodm glass	n	foodi both	foodf both	foodm both
Interior	11	24	24	21	11	24	24	20
Main	4	18	17	18	4	18	17	18
Numbered	3	12	11	16	3	12	10	15
Total:	18	21	20	19	18	20	20	19

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

All pairs.

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Street Frontage	Variable	Material	Which has more?	Prob.	Sig @ 5%
Interior vs. Main	liquori	glass	Main	0.0893	
Interior vs. Main	liquorf	glass	Main	0.0656	
Interior vs. Main	liquorm	glass	Main	0.0474	X
Interior vs. Main	liquori	both	Main	0.0893	
Interior vs. Main	liquorf	both	Main	0.0656	
Interior vs. Main	liquorm	both	Main	0.0474	X
Interior vs. Main	liqalci	glass	Main	0.0474	X
Interior vs. Main	liqalcf	glass	Main	0.0327	X
Interior vs. Main	liqalcm	glass	Main	0.0474	X
Interior vs. Main	liqalci	both	Main	0.0474	X
Interior vs. Main	liqalcf	both	Main	0.0327	X
Interior vs. Main	liqalcm	both	Main	0.0474	X
Interior vs. Main	patdrugf	glass	Interior	0.0539	
Interior vs. Numbered	liquori	glass	Numbered	0.0126	X
Interior vs. Numbered	liquorm	glass	Numbered	0.0126	X
Interior vs. Numbered	liqalci	glass	Numbered	0.0078	X
Interior vs. Numbered	liqalcm	glass	Numbered	0.0126	X

Significant Differences: ***(continued)***

Street Frontage	Variable	Material	Which has more?	Prob.	Sig @ 5%
Interior vs. Numbered	liquori	both	Numbered	0.0126	X
Interior vs. Numbered	liquorm	both	Numbered	0.0126	X
Interior vs. Numbered	liqalci	both	Numbered	0.0078	X
Interior vs. Numbered	liqalcm	both	Numbered	0.0126	X
Interior vs. Numbered	beeralci	glass	Interior	0.0430	X
Interior vs. Numbered	beeralcf	glass	Interior	0.0617	
Interior vs. Numbered	foodi	glass	Interior	0.0868	
Interior vs. Numbered	foodf	glass	Interior	0.0617	
Interior vs. Numbered	foodi	both	Interior	0.0868	
Interior vs. Numbered	foodf	both	Interior	0.0617	

Interpretations:

The type of street that a household fronted on strongly affected both alcohol and food consumption. Households facing onto interior streets consumed relatively less liquor than did households facing either numbered or main streets, by most of the relevant measures for both glass containers and all containers combined, largely at 5% confidence. Of the alcohol that they did consume, households facing interior streets preferred a lower proportion of liquor and a higher proportion of beer and ale. The percentage data suggest that households on interior streets did not consume any less alcohol overall, actually falling between households on numbered and main streets on all three measures. None of the significance tests on alcohol overall were significant, either; in fact, the lowest probabilities were around 33%, and most were over 75%, all with reasonably large sample sizes, suggesting that there was little difference in overall alcoholic-beverage consumption by street frontage. Instead, it was the mix of alcoholic-drink types that differed strongly, with households facing interior streets showing a markedly greater preference for beer and ale, and an even more marked distaste for liquor.

Households facing interior streets probably consumed more food packaged in glass, and in glass and ceramic containers combined, than did households on numbered streets. This pattern is significant at 10% confidence for the "percent of items" and "percent of fragments" measures, but not for the most conservative "percent of MNI" measure.

Finally, there might be a weakly indicated tendency of households facing interior streets to prefer patent medicines over medicines in embossed bottles from druggists or apothecaries more than households facing main streets. However, this pattern is significant only at the 10% level for the "percent of fragments" measure, and is not

corroborated by any other significant differences or by clear patterning in the percentage data, so it may be one of the occasional expected spurious "significant" results.

There was no significant patterning in recycling (whole bottles) by street-frontage type.

PRIVIES VS. WELLS (SF-80 AND WBA ONLY)

Feature Type	n	wholei glass	wholef glass	wholem glass	n	fstori cerami	fstorf ceram	fstorm ceram
Privy	15	7	8	22	11	24	32	25
Well	2	5	5	29	2	44	48	38
Other/combined	1	6	6	34	1	0	0	0
Total:	18	6	7	23	14	25	32	25

Feature Type	n	healthi glass	healthf glass	healthm glass	n	healthi both	healthf both	healthm both
Privy	15	3	2	5	15	3	2	5
Well	2	7	7	6	2	7	7	5
Other/combined	1	11	10	15	1	11	10	15
Total:	18	4	3	6	18	4	3	6

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

Privy vs. Well

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Feature Type	Variable	Material	Which has more?	Prob.	Sig @ 5%
Privy vs. well	healthf	Glass	Well	0.0592	
Privy vs. well	healthf	Both	Well	0.0592	
Privy vs. well	fstori	Ceram	Well	0.0911	

Interpretations:

There was no significant difference in recycling (whole bottles) between privies and wells in San Francisco. There might be a weak pattern of more medicines in general being discarded in wells, but this holds only at the 10% level and only for the "percent of fragments" measure, and looks weak or nonexistent in the percentage data, especially the more robust "percent of MNI" measure. This pattern could be one of the expected spurious "significant" results. Similarly, a weak pattern of a higher percentage of ceramic food-storage vessels is significant only for the "percent of items" measure at 10% confidence. These findings should cause any particular concerns about distortions introduced by mixing privy and well contexts. They do not appear to differ strongly.

RESULTS: COMPARISONS BETWEEN SAN FRANCISCO AND OAKLAND PRE-1890 CONTEXTS

ALL SAN FRANCISCO CONTEXTS VS. ALL OAKLAND CONTEXTS

City	n	wholei glass	wholef glass	wholem glass	n	alcoholi glass	alcoholf glass	alcoholm glass
San Francisco	18	6	7	23	18	38	39	27
Oakland	57	8	11	27	57	28	29	19
Total:	75	8	10	26	75	31	32	21

City	n	alcoholi ceram	alcoholf ceram	alcoholm ceram	n	alcoholi both	alcoholf both	alcoholm both
San Francisco	14	17	14	15	18	38	39	26
Oakland	50	38	38	39	57	29	30	22
Total:	64	33	33	34	75	31	32	23

City	n	beeri glass	beerf glass	beerm glass	n	beeri ceram	beerf ceram	beerm ceram
San Francisco	18	13	13	12	18	17	14	15
Oakland	57	6	6	5	57	38	38	39
Total:	75	7	7	6	75	33	33	34

All San Francisco Contexts vs. all Oakland Contexts *(continued)*

City	n	beeri both	beerf both	beerm both	n	beeralci glass	beeralcf glass	beeralcm glass
San Francisco	18	13	13	13	18	33	32	38
Oakland	57	9	9	9	57	18	17	22
Total:	75	10	10	10	75	22	21	26

City	n	beeralci both	beeralcf both	beeralcm both	n	winei glass	winef glass	winem glass
San Francisco	18	36	36	43	18	11	12	7
Oakland	57	27	26	34	57	9	9	5
Total:	75	29	28	36	75	9	10	6

City	n	winei both	winef both	winem both	n	liquori glass	liquorf glass	liquorm glass
San Francisco	18	11	12	7	18	2.4	2.3	2.1
Oakland	57	7	8	5	57	2.3	2.6	1.0
Total:	75	8	9	5	75	2.3	2.5	1.3

City	n	liquori both	liquorf both	liquorm both	n	liqalci both	liqalcf both	liqalcm both
San Francisco	18	2.3	2.2	2.0	18	6	5	8
Oakland	57	2.2	2.5	0.9	57	7	7	4
Total:	75	2.2	2.4	1.2	75	7	7	5

City	n	foodi glass	foodf glass	foodm glass	n	foodi ceram	foodf ceram	foodm ceram
San Francisco	18	21	20	19	14	7	9	5
Oakland	57	16	18	12	50	2	2	2
Total:	75	17	18	14	64	3	4	3

All San Francisco Contexts vs. all Oakland Contexts *(continued)*

City	n	foodi both	foodf both	foodm both	n	healthi glass	healthf glass	healthm glass
San Francisco	18	20	20	19	18	4	3	6
Oakland	57	15	16	11	57	10	9	11
Total:	75	16	17	13	75	8	7	9

City	n	healthi both	healthf both	healthm both	n	fstori both	fstorf both	fstorm both
San Francisco	18	4	3	6	18	2	2	4
Oakland	57	9	8	9	57	11	12	5
Total:	75	8	7	9	75	9	10	5

City	n	pati glass	patf glass	patm glass	n	asiai ceram	asiaf ceram	asiam ceram
San Francisco	18	3	3	5	14	20	22	15
Oakland	57	7	7	8	50	9	9	9
Total:	75	6	6	7	64	11	12	11

City	n	asiai both	asiaf both	asiam both
San Francisco	18	0.5	0.6	0.8
Oakland	57	1.3	1.3	0.6
Total:	75	1.1	1.2	0.7

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

All San Francisco vs. all Oakland

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

City	Variable	Material	Which has more?	Prob.	Sig @ 5%
San Francisco vs. Oakland	alcoholi	glass	San Francisco	0.0304	X
San Francisco vs. Oakland	alcoholf	glass	San Francisco	0.0314	X
San Francisco vs. Oakland	alcoholm	glass	San Francisco	0.0663	
San Francisco vs. Oakland	alcoholi	both	San Francisco	0.0277	X
San Francisco vs. Oakland	alcoholf	both	San Francisco	0.0277	X
San Francisco vs. Oakland	alcoholf	ceram	Oakland	0.0801	
San Francisco vs. Oakland	alcoholm	ceram	Oakland	0.0952	
San Francisco vs. Oakland	beeri	glass	San Francisco	0.0008	X
San Francisco vs. Oakland	beerf	glass	San Francisco	0.0004	X
San Francisco vs. Oakland	beerm	glass	San Francisco	0.0020	X
San Francisco vs. Oakland	beerf	ceram	Oakland	0.0950	
San Francisco vs. Oakland	beeri	both	San Francisco	0.0036	X
San Francisco vs. Oakland	beerf	both	San Francisco	0.0035	X
San Francisco vs. Oakland	beerm	both	San Francisco	0.0358	X
San Francisco vs. Oakland	beeralci	glass	San Francisco	0.0090	X
San Francisco vs. Oakland	beeralcf	glass	San Francisco	0.0041	X
San Francisco vs. Oakland	beeralcm	glass	San Francisco	0.0097	X
San Francisco vs. Oakland	beeralcf	both	San Francisco	0.0565	
San Francisco vs. Oakland	winei	glass	San Francisco	0.0774	
San Francisco vs. Oakland	winef	glass	San Francisco	0.0770	
San Francisco vs. Oakland	winei	both	San Francisco	0.0322	X
San Francisco vs. Oakland	winef	both	San Francisco	0.0334	X
San Francisco vs. Oakland	winem	both	San Francisco	0.0594	
San Francisco vs. Oakland	liquorm	glass	San Francisco	0.0571	
San Francisco vs. Oakland	liquori	both	San Francisco	0.0994	
San Francisco vs. Oakland	liquorm	both	San Francisco	0.0553	
San Francisco vs. Oakland	liqalcm	both	San Francisco	0.0761	
San Francisco vs. Oakland	foodi	glass	San Francisco	0.0681	

Significant Differences: ***(continued)***

City	Variable	Material	Which has more?	Prob.	Sig @ 5%
San Francisco vs. Oakland	foodm	glass	San Francisco	0.0022	X
San Francisco vs. Oakland	foodi	ceram	San Francisco	0.0103	X
San Francisco vs. Oakland	foodf	ceram	San Francisco	0.0129	X
San Francisco vs. Oakland	foodm	ceram	San Francisco	0.0150	X
San Francisco vs. Oakland	foodi	both	San Francisco	0.0514	
San Francisco vs. Oakland	foodm	both	San Francisco	0.0009	X
San Francisco vs. Oakland	fstori	both	Oakland	0.0203	X
San Francisco vs. Oakland	fstorf	both	Oakland	0.0158	X
San Francisco vs. Oakland	healthi	glass	Oakland	0.0261	X
San Francisco vs. Oakland	healthf	glass	Oakland	0.0500	X
San Francisco vs. Oakland	healthm	glass	Oakland	0.0301	X
San Francisco vs. Oakland	healthi	both	Oakland	0.0556	
San Francisco vs. Oakland	healthf	both	Oakland	0.0947	
San Francisco vs. Oakland	healthm	both	Oakland	0.0421	X
San Francisco vs. Oakland	pati	glass	Oakland	0.0905	
San Francisco vs. Oakland	patm	glass	Oakland	0.0793	
San Francisco vs. Oakland	asiai	ceram	San Francisco	0.0042	X
San Francisco vs. Oakland	asiaf	ceram	San Francisco	0.0051	X
San Francisco vs. Oakland	asiam	ceram	San Francisco	0.0078	X
San Francisco vs. Oakland	asiai	both	San Francisco	0.0096	X
San Francisco vs. Oakland	asiaf	both	San Francisco	0.0101	X
San Francisco vs. Oakland	asiam	both	San Francisco	0.0173	X
San Francisco vs. Oakland	wholei	ceram	San Francisco	0.0620	
San Francisco vs. Oakland	wholef	ceram	San Francisco	0.0276	X

Interpretations:

There were numerous strong and consistent differences in the use of glass and ceramic containers between San Francisco and pre-1890 Oakland. As noted below, these patterns recur in many different subsets of the data, suggesting that they are genuinely city-level trends that crosscut other categories like occupation, ethnicity, neighborhood, and so on. These marked city-level differences in bottle consumption parallel some strong city-level differences noted in the analysis of meat consumption.

These city-level patterns are clear in this lumped analysis in part because the sample sizes are larger than for any within-city comparisons, which makes the significance tests sensitive to smaller differences between categories. However, the fact that the same patterns recur in the smaller sample size comparisons limited to individual categories, such as those between professional households in San Francisco and their counterparts in Oakland, indicates that many of the between-city differences are strong enough to be detected even without the large sample sizes of the entire cities lumped together.

Overall, a higher percentage of the containers used by people in the San Francisco households contained alcohol. This pattern holds for all three measures of glass containers, albeit at 5% confidence for the two more sensitive ones, and only 10% for the conservative "percent of MNI" measure. The same pattern holds on the two more sensitive measures for glass and ceramic containers combined. Similarly, a higher fraction of the containers in San Francisco contained beer or ale, at 5% confidence for all three measures of glass containers and of all three measures of glass and ceramic containers combined. Correspondingly, a higher fraction of the alcohol consumed in San Francisco was beer or ale, again with 5% confidence on all three measures for glass containers, although this pattern is weak for the glass and ceramic containers combined. San Franciscans consumed higher proportions of wine/champagne and liquor as well, although these trends are progressively less strongly indicated. In other words, assuming that households in the two cities consumed comparable total amounts of glass and ceramic containers in general, the San Franciscans drank more alcohol overall, more beer and ale, more wine and champagne, more liquor, and their mix of alcohol had a clearly greater emphasis on beer, along with a possibly greater emphasis on liquor.

The percentage data indicate that on the order of 20 to 30% of the total containers recovered contained alcoholic beverages. Beer and ale were consumed in the greatest quantity, typically comprising 5 to 13% of the containers, wine and champagne typically comprised 5 to 7% of the containers, and liquor bottles made up around 1 or 2 percent. A considerable number of alcoholic-beverage bottles could not be assigned to any of the specific categories, but the general pattern seems clear enough. According to the percentage data, the magnitude of the differences between the cities was considerable, with on the order of 20 to 40% more alcoholic-beverage containers overall in San Francisco assemblages; roughly 100% more beer containers; a 25 to 75% greater preference for beer out of the total alcoholic-beverage container assemblage; roughly 40% more wine bottles; a bit over 100% more liquor bottles; and roughly double the preference for liquor in the overall mix of alcoholic beverages.

The one exception to these overwhelming trends is the greater use in Oakland households of alcoholic beverages packaged in ceramic containers, and specifically of beer and ale in ceramic bottles. This pattern is moderately well supported by the significance tests, reaching 10% significance on two measures of alcoholic beverage containers in general, including the "percent of MNI" measure, and on one measure of beer and ale bottles specifically. It looks more dramatic in the percentage data, where

Oakland households average well over twice the percentage of ceramic beer and ale bottles found in San Francisco features. Unlike the patterning in ceramic beer bottles within San Francisco, the difference in ceramic beer bottle use between the two cities is robust in terms of sample size, with a total of 219 ceramic beer bottles in all by MNI. This city-level difference could have an economic or social origin, or it might relate to something as simple as differing distribution networks of breweries that happened to use ceramic bottles.

San Francisco households also consumed a higher proportion of food packaged in both glass and ceramic containers, a pattern that holds for a variety of measures and is significant at the 5% level for the robust "percent of MNI" measure for glass containers, ceramic containers, and both combined. Interestingly, Oakland households may have used more containers for home preservation and storage of food, or may have purchased more foods preserved locally by cottage industry. This pattern is significant with 5% confidence, but only for the two more sensitive measures of the combined container assemblage, not for the "percent of MNI" measure or either of the material types alone. Nevertheless, this tantalizing trend might suggest interesting differences in the domestic economies of San Francisco and Oakland, perhaps with Oakland having better access to fresh produce, or San Franciscans having more urban preferences for commercialized foods.

The residents of Oakland clearly consumed more medicines in general than did residents of San Francisco, at 10 or 5% confidence on all six relevant measures. Oaklanders probably also had a greater preference for patent medicines, as opposed to medicines in embossed bottles from apothecaries or druggists, than did San Franciscans, although this pattern is significant only at the 10% level on two measures, including "percent of MNI." As with the alcoholic-beverage patterns, these differences are fairly large in the percentage data, with 50 to 80% higher percentages of medicine containers in Oakland features and about a 60% greater preference for patent medicines. Again, many possible interpretations suggest themselves, from economic or cultural differences to a higher incidence or perception of disease in Oakland.

Perhaps not surprisingly, San Franciscans used more goods packaged in containers from Asia than did Oaklanders, with 5% confidence on all six relevant measures. The sample of Asian containers is not large at 28 total by MNI, but it is probably sufficient to indicate a believable pattern at the entire-city level.

Finally, San Francisco households may have thrown away more whole ceramic containers than did Oakland households. This pattern holds only for the two less conservative measures, albeit with 5% confidence for one of them. Since there was not a recycling market for ceramic containers, it is not clear what a difference in the percentage of whole ceramic containers might mean in functional terms. It could be related to the Oaklander's greater consumption of beer in ceramic bottles. There was no significant difference in recycling of whole glass bottles between households in San Francisco and Oakland.

OCCUPATIONS IN SAN FRANCISCO VS. THEIR COUNTERPARTS IN OAKLAND

City & Occupation	n	wholei glass	wholef glass	wholem glass	n	alcoholi glass	alcoholf glass	alcoholm glass
P+ SF	3	7	8	27	3	27	29	17
P+ Oak	3	3	3	22	3	34	35	19
P+ total	6	5	5	25	6	31	32	18
P SF	3	2	3	16	3	39	40	28
P Oak	10	9	12	26	10	27	29	19
P total	13	8	9	24	13	30	31	21
S SF	9	6	7	26	9	43	44	32
S Oak	22	8	12	25	22	23	24	17
S total	31	7	11	25	31	29	30	22
U SF	2	14	18	25	2	23	23	18
U Oak	6	5	6	21	6	34	34	21
U total	8	7	9	22	8	31	32	20

City & Occupation	n	alcoholi ceram	alcoholf ceram	alcoholm ceram	n	alcoholi both	alcoholf both	alcoholm both
P+ SF	2	15	7	17	3	26	28	17
P+ Oak	3	14	14	13	3	33	33	18
P+ total	5	14	11	14	6	29	31	18
P SF	2	0	0	0	3	39	40	27
P Oak	8	33	33	33	10	27	29	21
P total	10	27	27	26	13	30	32	22
S SF	7	15	11	12	9	43	44	32
S Oak	21	45	48	44	22	26	27	22
S total	28	38	38	36	31	31	32	25
U SF	2	48	50	42	2	27	28	19
U Oak	4	16	11	29	6	33	34	21
U total	6	27	24	33	8	32	32	20

Occupations in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Occupation	n	beeri glass	beerf glass	beerm glass	n	beeri ceram	beerf ceram	beerm ceram
P+ SF	3	9	9	4	2	15	7	17
P+ Oak	3	1	1	2	3	14	14	13
P+ total	6	5	5	3	5	14	11	14
P SF	3	12	12	10	2	0	0	0
P Oak	10	8	8	4	8	33	33	33
P total	13	9	9	6	10	27	27	26
S SF	9	16	16	17	7	15	11	12
S Oak	22	5	5	5	21	45	48	43
S total	31	8	8	8	28	38	38	36
U SF	2	9	9	8	2	48	50	42
U Oak	6	14	14	8	4	16	11	29
U total	8	13	13	8	6	27	24	33

City & Occupation	n	beeri both	beerf both	beerm both	n	beeralci glass	beeralcf glass	beeralcm glass
P+ SF	3	8	8	5	3	28	28	23
P+ Oak	3	1	1	2	3	2	2	4
P+ total	6	5	5	3	6	15	15	14
P SF	3	12	12	10	3	31	31	32
P Oak	10	10	11	7	10	20	20	17
P total	13	11	11	8	13	22	22	21
S SF	9	16	16	17	9	41	40	51
S Oak	22	11	11	11	22	34	33	41
S total	31	12	12	13	31	36	35	44
U SF	2	13	14	10	2	23	23	26
U Oak	6	14	14	8	6	28	28	26
U total	8	14	14	9	8	27	27	26

Occupations in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Occupation	n	winei glass	winef glass	winem glass	n	winei both	winef both	winem both
P+ SF	3	7	7	4	3	7	7	3
P+ Oak	3	18	19	12	3	18	18	12
P+ total	6	13	13	8	6	12	13	8
P SF	3	17	18	10	3	17	18	10
P Oak	10	12	13	7	10	11	11	6
P total	13	13	14	7	13	12	13	7
S SF	9	11	11	7	9	10	11	7
S Oak	22	5	5	4	22	4	4	3
S total	31	7	7	5	31	6	6	4
U SF	2	13	7	4	2	7	7	4
U Oak	6	11	4	2	6	4	4	2
U total	8	12	5	2	8	4	5	2

City & Occupation	n	winealci glass	winealcf glass	winealc m glass	n	foodi glass	foodf glass	foodm glass
P+ SF	3	23	23	19	3	17	16	17
P+ Oak	3	50	50	61	3	30	31	20
P+ total	6	36	36	40	6	24	23	18
P SF	3	43	43	40	3	35	36	28
P Oak	10	39	39	34	10	14	15	12
P total	13	40	40	36	13	19	20	15
S SF	9	29	29	24	9	18	18	17
S Oak	22	19	19	21	22	16	19	13
S total	31	22	22	22	31	16	19	14
U SF	2	18	18	13	2	18	18	20
U Oak	6	17	17	11	6	13	13	12
U total	8	17	17	12	8	14	14	14

Occupations in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Occupation	n	foodi ceram	foodf ceram	foodm ceram	n	foodi both	foodf both	foodm both
P+ SF	2	7	9	9	3	17	16	16
P+ Oak	3	11	12	4	3	27	28	18
P+ total	5	9	11	6	6	22	22	17
P SF	2	36	42	17	3	35	36	27
P Oak	8	0	0	0	10	12	13	11
P total	10	7	8	3	13	18	18	15
S SF	7	0	0	1	9	17	18	16
S Oak	21	2	3	3	22	14	18	11
S total	28	2	2	3	31	15	18	13
U SF	2	0	0	0	2	17	15	18
U Oak	4	0	0	0	6	12	13	11
U total	6	0	0	0	8	13	13	13

City & Occupation	n	fstori glass	fstorf glass	fstorm glass	n	fstori ceram	fstorf ceram	fstorm ceram
P+ SF	3	2	1	5	2	16	17	16
P+ Oak	3	6	6	5	3	35	37	21
P+ total	6	4	4	5	5	27	29	19
P SF	3	1	1	3	2	0	0	0
P Oak	10	6	6	2	8	22	30	23
P total	13	5	5	2	10	18	24	18
S SF	9	1	1	1	7	34	47	33
S Oak	22	14	15	5	21	25	26	21
S total	31	10	11	4	28	27	32	24
U SF	2	2	2	2	2	17	20	17
U Oak	6	7	8	4	4	29	31	25
U total	8	6	6	3	6	25	27	22

Occupations in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Occupation	n	fstori both	fstorf both	fstorm both	n	healthi glass	healthf glass	healthm glass
P+ SF	3	3	2	6	3	3	3	5
P+ Oak	3	10	10	7	3	4	4	5
P+ total	6	6	6	7	6	4	4	5
P SF	3	1	1	3	3	4	4	6
P Oak	10	10	10	4	10	7	4	8
P total	13	8	8	4	13	6	4	8
S SF	9	2	2	3	9	4	4	6
S Oak	22	17	18	6	22	13	12	13
S total	31	13	14	5	31	10	10	11
U SF	2	2	2	3	2	5	2	7
U Oak	6	8	8	5	6	9	8	12
U total	8	6	7	5	8	8	7	11

City & Occupation	n	healthi both	healthf both	healthm both	n	pati glass	patf glass	patm glass
P+ SF	3	3	3	5	3	2	2	4
P+ Oak	3	4	4	5	3	4	4	5
P+ total	6	3	3	5	6	3	3	5
P SF	3	4	4	6	3	4	4	6
P Oak	10	5	3	8	10	5	3	7
P total	13	5	3	7	13	5	4	6
S SF	9	4	4	6	9	4	3	5
S Oak	22	11	10	11	22	7	7	9
S total	31	9	8	10	31	6	6	8
U SF	2	5	2	7	2	5	2	7
U Oak	6	9	8	11	6	8	7	9
U total	8	8	6	10	8	7	6	9

Occupations in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Occupation	n	pati both	patf both	patm both	n	wholei ceram	wholef ceram	wholem ceram
P+ SF	3	2	2	4	2	22	36	27
P+ Oak	3	4	4	4	3	5	5	29
P+ total	6	3	3	4	5	12	18	28
P SF	3	4	4	6	2	32	58	42
P Oak	10	4	2	6	8	9	25	11
P total	13	4	3	6	10	13	32	17
S SF	9	4	3	5	7	15	48	19
S Oak	22	6	6	8	21	8	4	11
S total	31	6	5	7	28	10	16	13
U SF	2	5	2	7	2	8	10	8
U Oak	6	8	7	9	4	8	9	27
U total	8	7	5	8	6	8	10	21

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

San Francisco P+ vs. Oakland P+

San Francisco P vs. Oakland P

San Francisco S vs. Oakland S

San Francisco U vs. Oakland U

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

City and Occupation Comparisons:	Variable	Material	Which has more?	Prob.	Sig @ 5%
SF Professional vs. Oakland Prof.	alcoholi	glass	SF Professional	0.0759	
SF Professional vs. Oakland Prof.	alcoholf	glass	SF Professional	0.0755	
SF Skilled vs. Oakland Skilled	alcoholi	glass	SF Skilled	0.0123	X
SF Skilled vs. Oakland Skilled	alcoholf	glass	SF Skilled	0.0139	X
SF Skilled vs. Oakland Skilled	alcoholm	glass	SF Skilled	0.0187	X

Significant Differences: ***(continued)***

City and Occupation Comparisons:	Variable	Material	Which has more?	Prob.	Sig @ 5%
SF Skilled vs. Oakland Skilled	alcoholf	ceram	Oakland Skilled	0.0447	X
SF Skilled vs. Oakland Skilled	alcoholi	both	SF Skilled	0.0250	X
SF Skilled vs. Oakland Skilled	alcoholf	both	SF Skilled	0.0312	X
SF Skilled vs. Oakland Skilled	beeri	glass	SF Skilled	0.0036	X
SF Skilled vs. Oakland Skilled	beerf	glass	SF Skilled	0.0045	X
SF Skilled vs. Oakland Skilled	beerm	glass	SF Skilled	0.0041	X
SF Skilled vs. Oakland Skilled	beerf	ceram	Oakland Skilled	0.0641	
SF Skilled vs. Oakland Skilled	beeri	both	SF Skilled	0.0249	X
SF Skilled vs. Oakland Skilled	beerf	both	SF Skilled	0.0278	X
SF Skilled vs. Oakland Skilled	beerm	both	SF Skilled	0.0428	X
SF Skilled vs. Oakland Skilled	beeralcm	glass	SF Skilled	0.0409	X
SF Skilled vs. Oakland Skilled	winei	glass	SF Skilled	0.0405	X
SF Skilled vs. Oakland Skilled	winef	glass	SF Skilled	0.0345	X
SF Skilled vs. Oakland Skilled	winei	both	SF Skilled	0.0184	X
SF Skilled vs. Oakland Skilled	winef	both	SF Skilled	0.0153	X
SF Skilled vs. Oakland Skilled	winem	both	SF Skilled	0.0450	X
SF Skilled vs. Oakland Skilled	winealci	both	SF Skilled	0.0954	
SF Skilled vs. Oakland Skilled	winealcf	both	SF Skilled	0.0686	
SF Unskilled vs. Oakland Unskill	foodm	glass	SF Unskilled	0.0651	
SF Professional vs. Oakland Prof.	foodi	ceram	SF Professional	0.0801	
SF Professional vs. Oakland Prof.	foodf	ceram	SF Professional	0.0801	
SF Professional vs. Oakland Prof.	foodm	ceram	SF Professional	0.0801	
SF Professional vs. Oakland Prof.	foodi	both	SF Professional	0.0755	
SF Professional vs. Oakland Prof.	foodf	both	SF Professional	0.0755	
SF Unskilled vs. Oakland Unskill	foodm	both	SF Unskilled	0.0668	
SF Skilled vs. Oakland Skilled	fstori	glass	Oakland Skilled	0.0201	X
SF Skilled vs. Oakland Skilled	fstorf	glass	Oakland Skilled	0.0201	X
SF Skilled vs. Oakland Skilled	fstorm	glass	Oakland Skilled	0.0489	X
SF Skilled vs. Oakland Skilled	fstorf	ceram	SF Skilled	0.0709	
SF Wealthy prof. vs. Oak W. prof.	fstori	both	Oak Weal. prof.	0.0809	

Significant Differences: ***(continued)***

City and Occupation Comparisons:	Variable	Material	Which has more?	Prob.	Sig @ 5%
SF Wealthy prof. vs. Oak W. prof.	fstorf	both	Oak Weal. prof.	0.0809	
SF Skilled vs. Oakland Skilled	fstori	both	Oakland Skilled	0.0115	X
SF Skilled vs. Oakland Skilled	fstorf	both	Oakland Skilled	0.009	X
SF Skilled vs. Oakland Skilled	fstorm	both	Oakland Skilled	0.0673	
SF Skilled vs. Oakland Skilled	healthi	glass	Oakland Skilled	0.0295	X
SF Skilled vs. Oakland Skilled	healthf	glass	Oakland Skilled	0.0423	X
SF Skilled vs. Oakland Skilled	healthm	glass	Oakland Skilled	0.0167	X
SF Skilled vs. Oakland Skilled	healthi	both	Oakland Skilled	0.0817	
SF Skilled vs. Oakland Skilled	healthm	both	Oakland Skilled	0.0329	X
SF Skilled vs. Oakland Skilled	patm	glass	Oakland Skilled	0.0329	X
SF Skilled vs. Oakland Skilled	patm	both	Oakland Skilled	0.0743	
SF Skilled vs. Oakland Skilled	groomf	both	SF Skilled	0.0932	
SF Skilled vs. Oakland Skilled	wholei	ceram	SF Skilled	0.0709	
SF Skilled vs. Oakland Skilled	wholef	ceram	SF Skilled	0.0324	X

Interpretations:

This section repeats the same comparisons between cities as in the preceding section, but limits them to a single occupation category in each city. This procedure reduces the sample sizes compared to the whole-city analysis, making the tests less sensitive, but it also reduces possible confounding effects that might confuse the picture if some of the between-city differences were expressed differently among different occupation categories. For example, if the lifestyle of wealthy professionals in San Francisco differed from that of wealthy professionals in Oakland, while unskilled laborers lived similarly in both cities, this analysis should bring those patterns out.

In fact, these comparisons suggest that in general, the whole-city trends noted above may apply across the spectrum of occupation categories. Most of the significant differences are among skilled households from the two cities, at first glance suggesting that households in this occupation category may have expressed the city-level differences more strongly than did households in other categories. The greater strength of the patterning in skilled households, however, more likely reflects the much greater sample size for skilled households than for any other occupation category, since there are more than twice as many features from skilled households as from the next largest category. With a few exceptions, most of the patterns in the percentage data for individual occupation categories agree with the city-level differences found in the lumped city comparisons, even though the patterns are not strong enough to be

statistically significant. In other words, aside from the exceptions discussed below, the city-level patterning in alcohol consumption, food packaged in glass and ceramic containers, and so on seems to crosscut the occupation categories. Living in San Francisco as opposed to Oakland affected households of different occupational status in similar ways.

The wealthy professional category includes the absolute minimum number of features required for the tests to show a significant difference with 10% confidence, and the unskilled category is only one feature above the minimum to show a significant difference with 5% confidence. The scarcity of significant differences that mirror the city-level patterns within these occupation categories could be explained simply by the small sample sizes, which make the tests sensitive to only the most drastic differences. The percentage data, however, suggest that there could be an underlying cultural pattern as well. For several measures, including glass alcoholic-beverage containers and alcoholic-beverage containers of glass and ceramic combined, both wealthy professional households and unskilled workers' households show little difference between San Francisco and Oakland, even reversing the city-level patterns. The wealthy professionals' households even more strongly invert the city-level patterns for wine bottles, with wealthy professionals in Oakland averaging a considerably larger percentage of wine bottles in both their glass and combined glass- and ceramic-container refuse than their counterparts in San Francisco. Finally, these wealthy professionals reversed the city-level patterns in purchases of food in glass containers, with wealthy professionals in Oakland disposing of more such containers than their analogues in San Francisco. None of these patterns is statistically significant, but all together they suggest that the high and low ends of the occupational status spectrum, and especially the wealthy professionals, may have been less affected by city-specific cultural or market forces than were the more numerous skilled and professional workers in the middle of the occupational status range.

It is tempting to suggest economic and cultural rationales for the seeming insulation of the most wealthy and, perhaps, the most impoverished from city-level effects, and they should be considered as reasonable hypotheses. However, these results are not statistically significant for good reason. With samples this small, one or two idiosyncratic individuals or historical anomalies could account for them just as well as could broad cultural processes.

A handful of significant differences were found within occupation categories that did not appear in the whole-city comparisons, but none of them seem out of place in the context of the whole-city patterns. Skilled workers in San Francisco included more wine in their mix of alcoholic beverages than did their counterparts in Oakland, on the two more sensitive measures with only 10% confidence. While this preference was not noted in the city-level comparisons, it does accord with the greater percentage of wine bottles in San Francisco container refuse overall. Similarly, skilled households in Oakland used more food locally stored in glass than did skilled households in San Francisco by all three measures, and the same is true for ceramic containers by a single measure. This

pattern was noted in the whole-city comparison, but was only significant in the combined glass- and ceramic-container dataset. The greater proportion of patent-medicine containers in Oakland noted in the city-level analysis for glass containers is significant among skilled households for the combined glass- and ceramic-dataset as well. While these findings differ in detail from those in the whole-city analysis, they agree with the same general consumption patterns.

Finally, by a single measure at 10% confidence, skilled workers in San Francisco may have used more grooming products packaged in ceramic and glass containers than did their counterparts in Oakland. This result is not supported by any others, and should be taken with considerable caution.

OWNERS AND TENANTS IN SAN FRANCISCO VS. THEIR COUNTERPARTS IN OAKLAND

City & Tenure	n	wholei glass	wholef glass	wholem glass	n	alcoholi glass	alcoholf glass	alcoholm glass
SF tenants	7	9	10	27	7	36	37	23
Oak tenants	24	8	13	25	24	21	22	17
Total tenants	31	8	12	25	31	25	25	19
SF owners	5	7	8	21	5	33	34	29
Oak owners	19	7	9	24	19	33	35	21
Total owners	24	7	8	24	24	33	35	23

City & Tenure	n	alcoholi both	alcoholf both	alcoholm both	n	beeri glass	beerf glass	beerm glass
SF tenants	7	36	37	23	7	14	15	12
Oak tenants	24	23	23	20	24	7	7	5
Total tenants	31	26	26	20	31	9	9	7
SF owners	5	32	33	28	5	11	11	10
Oak owners	19	34	35	25	19	6	6	4
Total owners	24	34	35	25	24	7	7	5

Owners and Tenants in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Tenure	n	beeri both	beerf both	beerm both	n	winei glass	winef glass	winem glass
SF tenants	7	15	16	12	7	10	11	6
Oak tenants	24	10	10	9	24	5	5	3
Total tenants	31	11	12	9	31	6	6	4
SF owners	5	11	10	10	5	10	10	9
Oak owners	19	9	9	9	19	13	14	8
Total owners	24	9	10	9	24	12	13	8

City & Tenure	n	winei both	winef both	winem both	n	winealci both	winealcf both	winealc m both
SF tenants	7	10	11	5	7	30	30	25
Oak tenants	24	4	4	3	24	17	17	18
Total tenants	31	5	6	3	31	20	20	20
SF owners	5	10	10	9	5	27	27	25
Oak owners	19	11	11	7	19	33	32	30
Total owners	24	11	11	7	24	31	31	29

City & Tenure	n	liquori glass	liquorf glass	liquorm glass	n	liquori both	liquorf both	liquorm both
SF tenants	7	1.8	1.4	1.7	7	1.7	1.4	1.6
Oak tenants	24	0.9	0.9	0.8	24	0.8	0.9	0.7
Total tenants	31	1.1	1.0	1.0	31	1.0	1.0	0.9
SF owners	5	1.9	1.9	1.9	5	1.8	1.8	1.7
Oak owners	19	2.2	2.3	1.0	19	2.2	2.3	0.9
Total owners	24	2.2	2.2	1.2	24	2.1	2.2	1.1

Owners and Tenants in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Tenure	n	foodi ceram	foodf ceram	foodm ceram	n	fstori glass	fstorf glass	fstorm glass
SF tenants	7	10	12	6	7	1	1	0
Oak tenants	20	3	3	3	24	11	12	4
Total tenants	27	5	5	4	31	9	9	3
SF owners	2	7	9	9	5	2	1	4
Oak owners	17	2	2	1	19	8	8	4
Total owners	19	2	3	2	24	7	7	4

City & Tenure	n	fstori both	fstorf both	fstorm both	n	healthi glass	healthf glass	healthm glass
SF tenants	7	2	2	2	7	5	4	6
Oak tenants	24	16	16	6	24	11	10	11
Total tenants	31	12	13	5	31	10	9	10
SF owners	5	2	2	5	5	2	2	3
Oak owners	19	9	9	4	19	8	7	11
Total owners	24	7	8	4	24	7	6	9

City & Tenure	n	pati glass	patf glass	patm glass	n	asiai ceram	asiaf ceram	asiam ceram
SF tenants	7	5	4	5	7	24	26	19
Oak tenants	24	6	6	8	20	13	14	15
Total tenants	31	6	5	7	27	16	17	16
SF owners	5	1	1	3	2	28	31	22
Oak owners	19	7	5	8	17	7	7	7
Total owners	24	6	4	7	19	9	9	9

Owners and Tenants in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Tenure	n	asiai both	asiaf both	asiam both	n	writingi both	writingf both	writingm both
SF tenants	7	0.7	0.8	0.9	7	0.3	0.1	1.2
Oak tenants	24	2.8	2.9	0.6	24	2.1	1.4	2.7
Total tenants	31	2.3	2.4	0.7	31	1.7	1.1	2.4
SF owners	5	0.6	0.7	1.1	5	0.1	0.0	0.7
Oak owners	19	0.1	0.1	0.7	19	1.5	1.5	2.6
Total owners	24	0.2	0.3	0.8	24	1.2	1.2	2.2

City & Tenure	n	wholei ceram	wholef ceram	wholem ceram
SF tenants	7	15	48	21
Oak tenants	20	6	1	7
Total tenants	27	8	14	11
SF owners	2	22	36	27
Oak owners	17	11	22	24
Total owners	19	13	23	24

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

Owners in San Francisco vs. Owners in Oakland

Tenants in San Francisco vs. Tenants in Oakland

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

City and Tenure	Variable	Material	Which has more?	Prob.	Sig @ 5%
SF tenants vs. Oakland tenants	alcoholi	glass	SF tenants	0.0620	
SF tenants vs. Oakland tenants	alcoholf	glass	SF tenants	0.0499	X
SF tenants vs. Oakland tenants	alcoholi	both	SF tenants	0.0316	X
SF tenants vs. Oakland tenants	alcoholf	both	SF tenants	0.0280	X
SF tenants vs. Oakland tenants	beerf	glass	SF tenants	0.0980	

Significant Differences: ***(continued)***

City and Tenure	Variable	Material	Which has more?	Prob.	Sig @ 5%
SF tenants vs. Oakland tenants	beeri	both	SF tenants	0.0740	
SF tenants vs. Oakland tenants	beerf	both	SF tenants	0.0666	
SF owners vs. Oakland owners	beeri	glass	SF owners	0.0856	
SF owners vs. Oakland owners	beerf	glass	SF owners	0.0856	
SF owners vs. Oakland owners	beerm	glass	SF owners	0.0789	
SF tenants vs. Oakland tenants	winei	glass	SF tenants	0.0315	X
SF tenants vs. Oakland tenants	winef	glass	SF tenants	0.0225	X
SF tenants vs. Oakland tenants	winei	both	SF tenants	0.0167	X
SF tenants vs. Oakland tenants	winef	both	SF tenants	0.0115	X
SF tenants vs. Oakland tenants	winem	both	SF tenants	0.0699	
SF tenants vs. Oakland tenants	winealcf	both	SF tenants	0.0987	
SF tenants vs. Oakland tenants	liquori	glass	SF tenants	0.0802	
SF tenants vs. Oakland tenants	liquorm	glass	SF tenants	0.0899	
SF tenants vs. Oakland tenants	liquori	both	SF tenants	0.0713	
SF owners vs. Oakland owners	foodi	ceram	SF owners	0.0024	X
SF owners vs. Oakland owners	foodf	ceram	SF owners	0.0024	X
SF owners vs. Oakland owners	foodm	ceram	SF owners	0.0024	X
SF tenants vs. Oakland tenants	fstori	glass	Oakland tenants	0.0474	X
SF tenants vs. Oakland tenants	fstorf	glass	Oakland tenants	0.0474	X
SF tenants vs. Oakland tenants	fstorm	glass	Oakland tenants	0.0351	X
SF tenants vs. Oakland tenants	fstori	both	Oakland tenants	0.0310	X
SF tenants vs. Oakland tenants	fstorf	both	Oakland tenants	0.0275	X
SF tenants vs. Oakland tenants	fstorm	both	Oakland tenants	0.0439	X
SF tenants vs. Oakland tenants	healthm	glass	Oakland tenants	0.0724	
SF owners vs. Oakland owners	healthi	glass	Oakland owners	0.0888	
SF owners vs. Oakland owners	pati	glass	Oakland owners	0.0888	
SF tenants vs. Oakland tenants	asiai	both	SF tenants	0.0341	X
SF tenants vs. Oakland tenants	asiaf	both	SF tenants	0.0397	X
SF tenants vs. Oakland tenants	asiam	both	SF tenants	0.0701	
SF owners vs. Oakland owners	asiai	ceram	SF owners	0.0119	X
SF owners vs. Oakland owners	asiaf	ceram	SF owners	0.0119	X

Significant Differences: ***(continued)***

City and Tenure	Variable	Material	Which has more?	Prob.	Sig @ 5%
SF owners vs. Oakland owners	asiam	ceram	SF owners	0.0119	X
SF owners vs. Oakland owners	writingi	both	Oakland owners	0.0766	
SF tenants vs. Oakland tenants	wholei	ceram	SF tenants	0.0595	
SF tenants vs. Oakland tenants	wholef	ceram	SF tenants	0.0218	X
SF tenants vs. Oakland tenants	wholem	ceram	SF tenants	0.0595	

Interpretations:

Tenants in San Francisco differed from their counterparts in Oakland in the same general ways, as did the cities as a whole. That is, San Francisco tenants consumed more alcohol bottles; more beer in glass containers and in glass and ceramic bottles combined; more wine, and more liquor, all by multiple measures, some at 5% confidence. Tenants in San Francisco also paralleled the city as a whole in purchasing more goods in containers from Asia, fewer foods preserved in their own households or by cottage industry, and possibly fewer medicines in general than did their Oakland counterparts, again by multiple measures, many at 5% confidence. San Francisco tenants also replicate the pattern of discarding relatively more whole ceramic containers than did Oakland tenants.

Homeowners in San Francisco followed some of the same city-level patterns, a few sufficiently strongly to be significant, and others only strongly enough to be suggested by the percentage data. However, the percentage data also suggest that homeowners in the two cities might even reverse some city-level trends, albeit too weakly to be statistically significant. San Francisco homeowners follow the city-level trend of consuming significantly more beer, more foods packaged in ceramic containers, more goods in containers from Asia, and probably fewer medicines in general and patent medicines in particular than did their Oakland counterparts, by varying numbers of measures and degrees of confidence. The greater use of alcoholic beverages overall, of wine, and of liquor that was noted in San Francisco at the city level and among tenants is not, however, detected by significance tests among homeowners. The percentage data suggest that San Francisco homeowners may have followed the city trend of consuming more alcoholic beverages than their Oakland counterparts, albeit not significantly so, while perhaps not expressing or even reversing the San Franciscan emphasis on wine and liquor.

The weaker city-level patterning among homeowners might be partially due to the greater sample size of 31 tenant households, as opposed to 24 homeowner households, but these are reasonably large samples and the difference in size is not overwhelming. Instead, this pattern may corroborate the impression from the occupation analysis that higher-status households, in this case assumed to be the homeowners, may have been

relatively less affected by the cultural or market differences between the two cities than were lower-status tenant households.

It may be relevant that the two strongest and most consistent differences between homeowners in the two cities are in what would have been comparatively expensive consumer or luxury goods, that is, prepared foods packaged in ceramic containers and goods in containers from Asia, both of which were used more by San Franciscan homeowners than by Oakland homeowners. Both of these patterns are based on small numbers of items, however, so they should be regarded as tentative.

Several significant differences were detected among the tenants of the two cities that were not noted in the lumped city comparisons. All but one reflect the same general patterns that were seen in the city-level comparisons, but in different measures. For example, San Francisco tenants disposed of more glass liquor bottles by the "percent of items" measure than did Oakland tenants. While this variable did not differ significantly in the city-level comparison, other measures of liquor bottles did show significant differences in the same direction.

The one truly novel finding was a higher proportion of writing-related containers among Oakland homeowners than among San Francisco homeowners. This pattern was noted for only the "percent of items" measure of the combined glass- and ceramic-container dataset, and only with 10% confidence. It may be one of the expected a spurious "significant" results.

ETHNICITIES IN SAN FRANCISCO VS. THEIR COUNTERPARTS IN OAKLAND

City & Ethnicity	n	wholei glass	wholef glass	wholem glass	n	alcoholi glass	alcoholf glass	alcoholm glass
SF German	4	3	3	15	4	38	39	27
Oak German	5	8	9	27	5	25	27	19
Total German	9	6	6	21	9	31	32	23
SF Irish	6	8	10	25	6	46	46	36
Oak Irish	13	7	8	23	13	34	36	22
Total Irish	19	7	9	24	19	38	39	27
SF U.S. white	3	2	3	15	3	37	38	22
Oak U.S. white	16	10	17	28	16	27	28	18
Total U.S. wh.	19	9	15	26	19	29	30	19

Ethnicities in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Ethnicity	n	alcoholi both	alcoholf both	alcoholm both	n	beeri glass	beerf glass	beerm glass
SF German	4	38	38	26	4	16	16	10
Oak German	5	33	34	28	5	6	7	6
Total German	9	35	36	27	9	10	11	8
SF Irish	6	47	47	36	6	14	13	20
Oak Irish	13	34	35	25	13	9	9	5
Total Irish	19	38	39	28	19	10	10	10
SF U.S. white	3	36	36	20	3	11	11	10
Oak U.S. white	16	27	28	19	16	6	6	5
Total U.S. wh.	19	28	29	19	19	7	7	5

City & Ethnicity	n	beeri both	beerf both	beerm both	n	beeralci both	beeralcf both	beeralcm both
SF German	4	15	16	10	4	47	47	37
Oak German	5	19	19	18	5	33	31	37
Total German	9	17	17	14	9	39	38	37
SF Irish	6	15	15	20	6	36	36	52
Oak Irish	13	11	11	10	13	26	25	30
Total Irish	19	12	12	13	19	29	29	37
SF U.S. white	3	10	10	9	3	28	28	42
Oak U.S. white	16	7	8	7	16	30	30	32
Total U.S. wh.	19	8	8	7	19	30	29	33

Ethnicities in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Ethnicity	n	liquori glass	liquorf glass	liquorm glass	n	liquori both	liquorf both	liquorm both
SF German	4	2.9	3.0	2.4	4	2.8	2.9	2.3
Oak German	5	0.3	0.3	0.8	5	0.3	0.3	0.7
Total German	9	1.5	1.5	1.5	9	1.4	1.5	1.4
SF Irish	6	2.8	2.5	2.5	6	2.8	2.4	2.4
Oak Irish	13	2.8	2.9	1.0	13	2.7	2.8	1.0
Total Irish	19	2.8	2.8	1.5	19	2.7	2.7	1.4
SF U.S. white	3	0.9	0.9	0.9	3	0.8	0.9	0.8
Oak U.S. white	16	0.6	0.6	0.5	16	0.6	0.6	0.5
Total U.S. wh.	19	0.7	0.7	0.6	19	0.6	0.6	0.5

City & Ethnicity	n	liqalci glass	liqalcf glass	liqalcm glass	n	liqalci both	liqalcf both	liqalcm both
SF German	4	7	6	10	4	7	6	9
Oak German	5	5	5	4	5	4	4	3
Total German	9	5	5	7	9	5	5	6
SF Irish	6	8	4	13	6	6	4	9
Oak Irish	13	9	9	6	13	9	9	6
Total Irish	19	9	7	8	19	8	7	7
SF U.S. white	3	2	2	4	3	2	2	4
Oak U.S. white	16	1	1	2	16	1	1	2
Total U.S. wh.	19	2	1	3	19	1	1	2

Ethnicities in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Ethnicity	n	healthi glass	healthf glass	healthm glass	n	healthi both	healthf both	healthm both
SF German	4	5	5	10	4	5	4	10
Oak German	5	17	17	12	5	15	14	9
Total German	9	12	11	11	9	11	10	9
SF Irish	6	3	1	4	6	3	1	4
Oak Irish	13	8	7	12	13	8	7	11
Total Irish	19	7	5	9	19	6	5	9
SF U.S. white	3	5	5	5	3	5	5	4
Oak U.S. white	16	8	6	11	16	7	5	10
Total U.S. wh.	19	8	6	10	19	7	5	9

City & Ethnicity	n	patdrugi glass	patdrugf glass	patdrugm glass	n	patdrugi both	patdrugf both	patdrugm both
SF German	4	83	83	89	4	83	83	89
Oak German	5	23	22	44	5	23	22	44
Total German	9	53	52	66	9	53	52	66
SF Irish	6	86	91	83	6	86	91	83
Oak Irish	13	75	75	71	13	75	75	71
Total Irish	19	79	80	75	19	79	80	75
SF U.S. white	3	100	100	100	3	100	100	100
Oak U.S. white	16	92	93	90	16	92	93	90
Total U.S. wh.	19	93	95	92	19	93	95	92

Ethnicities in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Ethnicity	n	groomi ceram	groomf ceram	groomm ceram	n	foodi glass	foodf glass	foodm glass
SF German	2	26	1	28	4	23	23	20
Oak German	4	0	0	0	5	10	11	12
Total German	6	9	0	9	9	16	16	15
SF Irish	5	4	4	2	6	14	13	16
Oak Irish	9	10	11	6	13	8	8	11
Total Irish	14	8	9	4	19	10	10	12
SF U.S. white	3	0	0	0	3	33	33	27
Oak U.S. white	15	7	8	8	16	20	24	13
Total U.S. wh.	18	6	6	7	19	22	25	15

City & Ethnicity	n	foodi ceram	foodf ceram	foodm ceram	n	foodi both	foodf both	foodm both
SF German	2	4	4	5	4	23	23	20
Oak German	4	0	0	0	5	9	10	10
Total German	6	0	1	2	9	15	16	15
SF Irish	5	0	3	3	6	14	13	15
Oak Irish	9	0	0	0	13	8	8	9
Total Irish	14	0	1	1	19	10	10	11
SF U.S. white	3	0	28	14	3	32	32	26
Oak U.S. white	15	0	3	2	16	18	22	12
Total U.S. wh.	18	0	7	4	19	20	24	14

Ethnicities in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Ethnicity	n	fstori glass	fstorf glass	fstorm glass	n	fstori both	fstorf both	fstorm both
SF German	4	2	2	5	4	2	2	6
Oak German	5	4	4	2	5	4	4	3
Total German	9	3	3	3	9	3	4	4
SF Irish	6	1	1	1	6	2	2	2
Oak Irish	13	10	11	5	13	10	11	5
Total Irish	19	7	8	4	19	8	8	4
SF U.S. white	3	0	0	0	3	1	1	2
Oak U.S. white	16	9	9	4	16	16	16	7
Total U.S. wh.	19	7	8	4	19	13	14	6

City & Ethnicity	n	asiai ceram	asiaf ceram	asiam ceram	n	asiai both	asiaf both	asiam both
SF German	2	0	26	18	4	0.8	0.8	1.2
Oak German	4	0	5	13	5	0.2	0.2	0.4
Total German	6	0	12	14	9	0.4	0.5	0.8
SF Irish	5	0	12	12	6	0.5	0.6	0.8
Oak Irish	9	0	11	11	13	0.2	0.2	0.9
Total Irish	14	0	12	11	19	0.3	0.3	0.8
SF U.S. white	3	0	37	16	3	0.9	0.9	1.0
Oak U.S. white	15	0	10	10	16	4.1	4.3	0.7
Total U.S. wh.	18	0	15	11	19	3.6	3.7	0.8

Ethnicities in San Francisco vs. Their Counterparts in Oakland *(continued)*

City & Ethnicity	n	wholei ceram	wholef ceram	wholem ceram
SF German	2	27	53	30
Oak German	4	3	4	7
Total German	6	11	20	15
SF Irish	5	7	8	11
Oak Irish	9	12	17	27
Total Irish	14	10	14	21
SF U.S. white	3	9	10	16
Oak U.S. white	15	8	1	13
Total U.S. wh.	18	8	3	13

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

San Francisco German vs. Oakland German

San Francisco Irish vs. Oakland Irish

San Francisco U.S.-born white vs. Oakland U.S.-born white

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

City and Ethnicity	Variable	Material	Which has more?	Prob.	Sig @ 5%
SF German vs. Oakland German	beeri	glass	SF German	0.0651	
SF German vs. Oakland German	beerf	glass	SF German	0.0651	
SF German vs. Oakland German	patdrugi	glass	SF German	0.0809	
SF German vs. Oakland German	patdrugf	glass	SF German	0.0809	
SF German vs. Oakland German	patdrugm	glass	SF German	0.0809	
SF German vs. Oakland German	patdrugi	both	SF German	0.0809	
SF German vs. Oakland German	patdrugf	both	SF German	0.0809	
SF German vs. Oakland German	patdrugm	both	SF German	0.0809	
SF German vs. Oakland German	groomi	ceram	SF German	0.0552	

Significant Differences: ***(continued)***

City and Ethnicity	Variable	Material	Which has more?	Prob.	Sig @ 5%
SF German vs. Oakland German	groomm	ceram	SF German	0.0552	
SF Irish vs. Oakland Irish	beerm	glass	SF Irish	0.0652	
SF Irish vs. Oakland Irish	beerm	both	SF Irish	0.0697	
SF Irish vs. Oakland Irish	beeralcm	both	SF Irish	0.0994	
SF Irish vs. Oakland Irish	healthm	glass	Oakland Irish	0.0642	
SF Irish vs. Oakland Irish	healthm	both	Oakland Irish	0.0643	
SF Irish vs. Oakland Irish	foodm	glass	SF Irish	0.0480	X
SF Irish vs. Oakland Irish	foodm	both	SF Irish	0.0251	X
SF U.S. white vs. Oakland U.S. white	liquorf	glass	SF U.S. white	0.0501	
SF U.S. white vs. Oakland U.S. white	liquori	both	SF U.S. white	0.0835	
SF U.S. white vs. Oakland U.S. white	liquorf	both	SF U.S. white	0.0501	
SF U.S. white vs. Oakland U.S. white	liqalcf	glass	SF U.S. white	0.0614	
SF U.S. white vs. Oakland U.S. white	liqalcf	both	SF U.S. white	0.0614	
SF U.S. white vs. Oakland U.S. white	foodi	ceram	SF U.S. white	0.0420	X
SF U.S. white vs. Oakland U.S. white	foodf	ceram	SF U.S. white	0.0516	
SF U.S. white vs. Oakland U.S. white	foodm	ceram	SF U.S. white	0.0614	
SF U.S. white vs. Oakland U.S. white	fstori	glass	Oakland U.S.	0.0866	
SF U.S. white vs. Oakland U.S. white	fstorf	glass	Oakland U.S.	0.0866	
SF U.S. white vs. Oakland U.S. white	fstorm	glass	Oakland U.S.	0.0866	
SF U.S. white vs. Oakland U.S. white	fstorf	both	Oakland U.S.	0.0383	X
SF U.S. white vs. Oakland U.S. white	fstori	both	Oakland U.S.	0.0500	X
SF U.S. white vs. Oakland U.S. white	asiai	ceram	SF U.S. white	0.0876	

Significant Differences: ***(continued)***

City and Ethnicity	Variable	Material	Which has more?	Prob.	Sig @ 5%
SF U.S. white vs. Oakland U.S. white	asiai	both	SF U.S. white	0.0715	
SF U.S. white vs. Oakland U.S. white	asiaf	both	SF U.S. white	0.0715	
SF U.S. white vs. Oakland U.S. white	asiam	both	SF U.S. white	0.0998	
SF U.S. white vs. Oakland U.S. white	wholei	ceram	SF U.S. white	0.0991	
SF U.S. white vs. Oakland U.S. white	wholef	ceram	SF U.S. white	0.0343	X

Interpretations:

The sample sizes for each ethnicity are relatively small, so it is not surprising that there are fewer significant differences between households of the same ethnicity in San Francisco and Oakland than there are between the lumped city samples. Nevertheless, the patterns that do appear largely reflect the same city-level differences already noted.

The percentage data suggest that German households in San Francisco consumed more alcohol overall, more beer, and more liquor than their counterparts in Oakland, paralleling the whole-city patterns. These differences between German households in the two cities were not strong enough to register as significant except for the greater consumption of beer and ale, with 10% confidence on the two more sensitive measures. According to the percentage data, the German households probably conformed to the city-level patterns in prepared food containers, food-storage containers, containers from Asia, and the disposal of whole ceramic containers, although none of these patterns is significant by any measure. While the San Francisco German households may have had slightly fewer medicine containers in general relative to their Oakland counterparts, this pattern was not significant either. Of the medicines that San Francisco Germans did purchase, however, a higher proportion were patent medicines, as indicated by all three measures of both glass containers and glass and ceramic containers combined, albeit with only 10% confidence. Finally, the San Francisco German households purchased more grooming products in ceramic containers, by two measures including the "percent of MNI" measure. Since there are only 12 such containers in the entire sample, of which only 3 are from San Francisco, this pattern could instead be the result of a few individuals or unusual purchasing decisions, rather than any consistent behavior among Germans in the two cities.

Like the Germans, the Irish households in San Francisco also differed from their Oakland counterparts largely in the same ways that the cities' populations differed as a whole. The percentage data suggest that Irish households in San Francisco followed the

city-level patterns of consuming more alcohol overall, more beer, a higher proportion of beer in their mix of alcoholic beverages, more food packaged in glass, ceramic, and both types of containers combined, fewer medicines overall, and less food stored in glass or ceramic containers in their own households or by cottage industry. Of these trends, some of the differences in beer, medicine, and packaged foods are significant on one or two measures, with the greater use of foods packed in glass or ceramic and glass combined both reaching 5% confidence by the robust MNI measure. While the Irish households did not deviate from the city-level patterns on any measures sufficiently to be significant, the percentage data do suggest that Irish households in San Francisco may have had a less-pronounced emphasis on liquor than did households of other ethnicities, and may not have reflected the San Francisco pattern of greater use of containers from Asia. Like the Germans, the Irish of San Francisco may have bought more patent medicines as a proportion of all their medicines than did their counterparts in Oakland, although the difference is not statistically significant. Finally, the percentage data hint that Irish families in San Francisco may have reversed a city-level pattern by disposing of fewer whole ceramic containers than did Irish families in Oakland. As noted earlier, the meaning of the percentage of ceramic containers that were discarded whole is not clear.

Finally, U.S.-born whites in San Francisco also followed the city-level patterns. The percentage data suggest this conformity to city-level trends for all the variables discussed above, except the two less-robust measures of beer as a fraction of the mix of alcoholic beverages, and two of the six relevant measures of containers from Asia. None of these deviations from the city-level patterns are significant. Several patterns among U.S.-born whites are significant for variables that did not prove significant in the city-level analysis, but that indicate the same general trends seen at the city level. For example, U.S.-born whites in San Francisco consumed more liquor bottles as a fraction of all glass fragments than did their counterparts in Oakland, and consumed more liquor as a fraction of their mix of alcoholic beverages in glass containers and both types of containers combined, all with 10% confidence. None of these variables were significantly different in the lumped comparison of San Francisco and Oakland, but related ones such as the fraction of glass liquor bottles by the percent of MNI measure indicated the same trend at the city level. U.S.-born white households in San Francisco may show the same relatively greater preference for patent medicines as do the German and Irish households. This difference from U.S.-born whites in Oakland is not significant, but is consistent enough in the percentage data to be suggestive.

NEIGHBORHOODS IN SAN FRANCISCO VS. PRE-1890 NEIGHBORHOODS IN OAKLAND

Neighborhood	n	wholei glass	wholef glass	wholem glass	n	alcoholi glass	alcoholf glass	alcoholm glass
Mission Bay	8	7	8	21	8	41	41	30
Rincon Hill	10	6	7	25	10	37	38	24
All SF	18	6	7	23	18	38	39	27
East of Mkt	20	5	6	20	20	30	32	20
West of Mkt	17	12	20	35	17	29	31	18
Oak Point	20	7	7	27	20	25	26	20
All Oakland	57	8	11	27	57	28	29	19

Neighborhood	n	alcoholi ceram	alcoholf ceram	alcoholm ceram	n	alcoholi both	alcoholf both	alcoholm both
Mission Bay	6	28	29	24	8	41	42	30
Rincon Hill	8	8	3	9	10	36	37	24
All SF	14	17	14	15	18	38	39	26
East of Mkt	17	40	41	39	20	31	32	22
West of Mkt	16	51	54	52	17	32	33	24
Oak Point	17	24	24	27	20	24	25	20
All Oakland	50	38	38	39	57	29	30	22

Neighborhood	n	beeri glass	beerf glass	beerm glass	n	beeri ceram	beerf ceram	beerm ceram
Mission Bay	8	12	12	13	6	28	29	24
Rincon Hill	10	13	13	11	8	8	3	9
All SF	18	13	13	12	14	17	14	15
East of Mkt	20	7	7	5	17	40	41	39
West of Mkt	17	5	5	4	16	51	53	51
Oak Point	20	5	5	4	17	24	24	27
All Oakland	57	6	6	5	50	38	38	39

Neighborhoods in San Francisco vs. pre-1890 Neighborhoods in Oakland *(continued)*

Neighborhood	n	beeri both	beerf both	beerm both	n	beeralci glass	beeralcf glass	beeralcm glass
Mission Bay	8	13	13	14	8	33	32	37
Rincon Hill	10	13	13	11	10	32	32	39
All SF	18	13	13	13	18	33	32	38
East of Mkt	20	11	11	9	20	25	25	25
West of Mkt	17	10	10	12	17	15	13	20
Oak Point	20	5	5	6	20	13	12	20
All Oakland	57	9	9	9	57	18	17	22

Neighborhood	n	beeralci both	beeralcf both	beeralcm both	n	winei glass	winef glass	winem glass
Mission Bay	8	40	40	45	8	11	12	7
Rincon Hill	10	33	32	41	10	12	12	7
All SF	18	36	36	43	18	11	12	7
East of Mkt	20	32	32	34	20	10	11	6
West of Mkt	17	32	29	43	17	11	11	6
Oak Point	20	17	16	26	20	5	5	4
All Oakland	57	27	26	34	57	9	9	5

Neighborhood	n	winei both	winef both	winem both	n	winealci glass	winealcf glass	winealcm glass
Mission Bay	8	11	11	7	8	26	26	24
Rincon Hill	10	11	12	6	10	33	33	27
All SF	18	11	12	7	18	30	30	26
East of Mkt	20	9	9	5	20	33	34	31
West of Mkt	17	9	9	5	17	31	30	30
Oak Point	20	5	5	4	20	20	20	24
All Oakland	57	7	8	5	57	28	27	28

Neighborhoods in San Francisco vs. pre-1890 Neighborhoods in Oakland *(continued)*

Neighborhood	n	winealci both	winealcf both	winealcm both	n	liquori both	liquorf both	liquorm both
Mission Bay	8	26	26	23	8	2.7	2.4	2.2
Rincon Hill	10	33	33	27	10	2.0	2.1	1.8
All SF	18	30	30	25	18	2.3	2.2	2.0
East of Mkt	20	31	31	27	20	2.7	2.7	3.0
West of Mkt	17	26	25	22	17	15.2	17.1	7.9
Oak Point	20	20	19	23	20	0.9	0.9	0.7
All Oakland	57	25	25	24	57	2.2	2.5	0.9

Neighborhood	n	tobaci glass	tobacf glass	tobacm glass	n	tobaci both	tobacf both	tobacm both
Mission Bay	8	0.0	0.0	0.0	8	0.0	0.0	0.0
Rincon Hill	10	0.1	0.0	0.4	10	0.1	0.0	0.4
All SF	18	0.0	0.0	0.2	18	0.0	0.0	0.2
East of Mkt	20	0.0	0.0	0.0	20	0.0	0.0	0.0
West of Mkt	17	0.2	0.1	0.5	17	0.2	0.1	0.4
Oak Point	20	0.2	0.1	0.7	20	0.2	0.1	0.7
All Oakland	57	0.1	0.1	0.4	57	0.1	0.1	0.4

Neighborhood	n	foodi glass	foodf glass	foodm glass	n	foodi ceram	foodf ceram	foodm ceram
Mission Bay	8	17	17	19	6	4	4	4
Rincon Hill	10	23	23	20	8	10	12	6
All SF	18	21	20	19	14	7	9	5
East of Mkt	20	15	15	11	17	5	5	4
West of Mkt	17	14	18	11	16	0	0	0
Oak Point	20	19	19	15	17	1	1	2
All Oakland	57	16	18	12	50	2	2	2

Neighborhoods in San Francisco vs. pre-1890 Neighborhoods in Oakland *(continued)*

Neighborhood	n	foodi both	foodf both	foodm both	n	fstori glass	fstorf glass	fstorm glass
Mission Bay	8	17	16	18	8	1	2	2
Rincon Hill	10	23	23	19	10	2	1	2
All SF	18	20	20	19	18	1	1	2
East of Mkt	20	13	13	10	20	5	6	3
West of Mkt	17	13	17	9	17	9	9	4
Oak Point	20	18	19	15	20	12	13	4
All Oakland	57	15	16	11	57	9	9	4

Neighborhood	n	fstori ceram	fstorf ceram	fstorm ceram	n	fstori both	fstorf both	fstorm both
Mission Bay	6	27	29	28	8	2	2	4
Rincon Hill	8	25	35	24	10	2	2	3
All SF	14	25	32	25	18	2	2	4
East of Mkt	17	30	30	23	20	9	9	5
West of Mkt	16	6	8	6	17	8	9	4
Oak Point	17	43	48	36	20	16	17	6
All Oakland	50	27	30	22	57	11	12	5

Neighborhood	n	healthi glass	healthf glass	healthm glass	n	healthi both	healthf both	healthm both
Mission Bay	8	3	2	7	8	3	2	7
Rincon Hill	10	4	4	5	10	4	4	5
All SF	18	4	3	6	18	4	3	6
East of Mkt	20	8	8	9	20	7	6	8
West of Mkt	17	10	8	11	17	9	8	9
Oak Point	20	11	11	12	20	11	10	11
All Oakland	57	10	9	11	57	9	8	9

Neighborhoods in San Francisco vs. pre-1890 Neighborhoods in Oakland *(continued)*

Neighborhood	n	pati glass	patf glass	patm glass	n	pati both	patf both	patm both
Mission Bay	8	3	2	6	8	3	2	6
Rincon Hill	10	4	4	4	10	4	4	4
All SF	18	3	3	5	18	3	3	5
East of Mkt	20	6	6	7	20	5	5	6
West of Mkt	17	8	7	7	17	7	6	6
Oak Point	20	8	7	10	20	7	7	9
All Oakland	57	7	7	8	57	6	6	7

Neighborhood	n	patdrugi glass	patdrugf glass	patdrugm glass	n	patdrugi both	patdrugf both	patdrugm both
Mission Bay	8	87	90	87	8	87	90	87
Rincon Hill	10	91	90	87	10	91	90	87
All SF	18	89	90	87	18	89	90	87
East of Mkt	20	84	81	84	20	84	81	84
West of Mkt	17	70	77	65	17	70	77	65
Oak Point	20	88	88	87	20	88	88	87
All Oakland	57	82	83	80	57	82	83	80

Neighborhood	n	groomi glass	groomf glass	groomm glass	n	groomi both	groomf both	groomm both
Mission Bay	8	9	8	10	8	8	8	10
Rincon Hill	10	10	9	17	10	10	9	17
All SF	18	10	9	14	18	10	9	14
East of Mkt	20	9	8	14	20	8	7	13
West of Mkt	17	7	6	14	17	6	5	13
Oak Point	20	7	6	14	20	6	5	13
All Oakland	57	8	6	14	57	7	6	13

Neighborhoods in San Francisco vs. pre-1890 Neighborhoods in Oakland *(continued)*

Neighborhood	n	asiai ceram	asiaf ceram	asiam ceram	n	asiai both	asiaf both	asiam both
Mission Bay	6	21	22	18	8	0.9	0.9	1.3
Rincon Hill	8	20	22	13	10	0.3	0.3	0.4
All SF	14	20	22	15	18	0.5	0.6	0.8
East of Mkt	17	0	0	0	20	0.0	0.0	0.0
West of Mkt	16	13	14	13	17	0.1	0.1	0.7
Oak Point	17	14	14	16	20	3.6	3.7	1.1
All Oakland	50	9	9	9	57	1.3	1.3	0.6

Neighborhood	n	wholei ceram	wholef ceram	wholem ceram	n	wholei both	wholef both	wholem both
Mission Bay	6	6	7	9	8	7	8	20
Rincon Hill	8	24	63	30	10	6	7	26
All SF	14	17	39	21	18	6	7	23
East of Mkt	17	2	2	7	20	5	5	19
West of Mkt	16	23	21	31	17	13	22	36
Oak Point	17	9	18	17	20	6	7	26
All Oakland	50	11	13	18	57	8	11	26

Table includes commercial properties. Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

All pairs of neighborhoods

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

City and Ethnicity	Variable	Material	Which has more?	Prob.	Sig @ 5%
Between cities:					
Mission B SF vs. Oak Pt Oak	alcoholi	Glass	Mission Bay SF	0.0394	X
Mission B SF vs. Oak Pt Oak	alcoholf	Glass	Mission Bay SF	0.0634	
Mission B SF vs. Oak Pt Oak	alcoholi	Both	Mission Bay SF	0.0136	X
Mission B SF vs. Oak Pt Oak	alcoholf	Both	Mission Bay SF	0.0180	X
Mission B SF vs. East of Mkt Oak	beeri	Glass	Mission Bay SF	0.0525	
Mission B SF vs. East of Mkt Oak	beerf	Glass	Mission Bay SF	0.0664	
Mission B SF vs. East of Mkt Oak	beerm	Glass	Mission Bay SF	0.0928	
Mission B SF vs. East of Mkt Oak	beeri	Both	Mission Bay SF	0.0392	X
Mission B SF vs. East of Mkt Oak	beerf	Both	Mission Bay SF	0.0443	X
Mission B SF vs. East of Mkt Oak	beerm	Both	Mission Bay SF	0.0789	
Mission B SF vs. West of Mkt Oak	beeri	Glass	Mission Bay SF	0.0222	X
Mission B SF vs. West of Mkt Oak	beerf	Glass	Mission Bay SF	0.0160	X
Mission B SF vs. West of Mkt Oak	beerm	Glass	Mission Bay SF	0.0351	X
Mission B SF vs. Oak Pt Oak	beeri	Glass	Mission Bay SF	0.0192	X
Mission B SF vs. Oak Pt Oak	beerf	Glass	Mission Bay SF	0.0147	X
Mission B SF vs. Oak Pt Oak	beerm	Glass	Mission Bay SF	0.0288	X
Mission B SF vs. Oak Pt Oak	beeri	Both	Mission Bay SF	0.0028	X
Mission B SF vs. Oak Pt Oak	beerf	Both	Mission Bay SF	0.0028	X
Mission B SF vs. Oak Pt Oak	beerm	Both	Mission Bay SF	0.0132	X
Mission B SF vs. West of Mkt Oak	beeralci	Glass	Mission Bay SF	0.0955	
Mission B SF vs. West of Mkt Oak	beeralcf	Glass	Mission Bay SF	0.0364	X
Mission B SF vs. Oak Pt Oak	beeralci	Glass	Mission Bay SF	0.0610	
Mission B SF vs. Oak Pt Oak	beeralcf	Glass	Mission Bay SF	0.0300	X
Mission B SF vs. Oak Pt Oak	beeralci	Both	Mission Bay SF	0.0435	X
Mission B SF vs. Oak Pt Oak	beeralcf	Both	Mission Bay SF	0.0187	X
Mission B SF vs. Oak Pt Oak	winei	Both	Mission Bay SF	0.0968	
Mission B SF vs. Oak Pt Oak	winef	Both	Mission Bay SF	0.0848	

Significant Differences: ***(continued)***

City and Ethnicity	Variable	Material	Which has more?	Prob.	Sig @ 5%
Mission B SF vs. East of Mkt Oak	foodm	Glass	Mission Bay SF	0.0250	X
Mission B SF vs. East of Mkt Oak	foodm	Both	Mission Bay SF	0.0250	X
Mission B SF vs. West of Mkt Oak	foodm	Glass	Mission Bay SF	0.0442	X
Mission B SF vs. West of Mkt Oak	foodi	Ceram	Mission Bay SF	0.0220	X
Mission B SF vs. West of Mkt Oak	foodf	Ceram	Mission Bay SF	0.0326	X
Mission B SF vs. West of Mkt Oak	foodm	Ceram	Mission Bay SF	0.0220	X
Mission B SF vs. West of Mkt Oak	foodm	Both	Mission Bay SF	0.0248	X
Mission B SF vs. East of Mkt Oak	fstori	Both	East of Mkt Oak	0.0968	
Mission B SF vs. East of Mkt Oak	fstorf	Both	East of Mkt Oak	0.0968	
Mission B SF vs. West of Mkt Oak	fstori	Ceram	Mission Bay SF	0.0112	X
Mission B SF vs. West of Mkt Oak	fstorf	Ceram	Mission Bay SF	0.0219	X
Mission B SF vs. West of Mkt Oak	fstorm	Ceram	Mission Bay SF	0.0240	X
Mission B SF vs. Oak Pt Oak	fstori	Both	Oak Pt Oak	0.0440	X
Mission B SF vs. Oak Pt Oak	fstorf	Both	Oak Pt Oak	0.0389	X
Mission B SF vs. Oak Pt Oak	healthi	Glass	Oak Pt Oak	0.0327	X
Mission B SF vs. Oak Pt Oak	healthf	Glass	Oak Pt Oak	0.0201	X
Mission B SF vs. Oak Pt Oak	healthm	Glass	Oak Pt Oak	0.0326	X
Mission B SF vs. Oak Pt Oak	healthi	Both	Oak Pt Oak	0.0599	
Mission B SF vs. Oak Pt Oak	healthf	Both	Oak Pt Oak	0.0299	X
Mission B SF vs. Oak Pt Oak	healthm	Both	Oak Pt Oak	0.0327	X
Mission B SF vs. Oak Pt Oak	pati	Glass	Oak Pt Oak	0.0533	
Mission B SF vs. Oak Pt Oak	patf	Glass	Oak Pt Oak	0.0262	X
Mission B SF vs. Oak Pt Oak	patm	Glass	Oak Pt Oak	0.0669	
Mission B SF vs. Oak Pt Oak	pati	Both	Oak Pt Oak	0.0838	
Mission B SF vs. Oak Pt Oak	patf	Both	Oak Pt Oak	0.0299	X
Mission B SF vs. Oak Pt Oak	patm	Both	Oak Pt Oak	0.0750	
Mission B SF vs. East of Mkt Oak	asiai	Ceram	Mission Bay SF	0.0004	X
Mission B SF vs. East of Mkt Oak	asiaf	Ceram	Mission Bay SF	0.0004	X
Mission B SF vs. East of Mkt Oak	asiam	Ceram	Mission Bay SF	0.0004	X
Mission B SF vs. East of Mkt Oak	asiai	Both	Mission Bay SF	0.0010	X
Mission B SF vs. East of Mkt Oak	asiaf	Both	Mission Bay SF	0.0010	X

Significant Differences: ***(continued)***

City and Ethnicity	Variable	Material	Which has more?	Prob.	Sig @ 5%
Mission B SF vs. East of Mkt Oak	asiam	Both	Mission Bay SF	0.0010	X
Mission B SF vs. West of Mkt Oak	asiai	Ceram	Mission Bay SF	0.0433	X
Mission B SF vs. West of Mkt Oak	asiaf	Ceram	Mission Bay SF	0.0750	
Mission B SF vs. West of Mkt Oak	asiam	Ceram	Mission Bay SF	0.0433	X
Mission B SF vs. West of Mkt Oak	asiai	Both	Mission Bay SF	0.0394	X
Mission B SF vs. West of Mkt Oak	asiaf	Both	Mission Bay SF	0.0325	X
Mission B SF vs. West of Mkt Oak	asiam	Both	Mission Bay SF	0.0568	
Mission B SF vs. West of Mkt Oak	wholem	Both	West Mkt Oak	0.0756	
Mission B SF vs. East of Mkt Oak	wholei	Ceram	Mission Bay SF	0.0617	
Mission B SF vs. East of Mkt Oak	wholef	Ceram	Mission Bay SF	0.0617	
Rincon H SF vs. East of Mkt Oak	alcoholi	Ceram	East of Mkt Oak	0.0782	
Rincon H SF vs. East of Mkt Oak	alcoholf	Ceram	East of Mkt Oak	0.0258	X
Rincon H SF vs. East of Mkt Oak	alcoholm	Ceram	East of Mkt Oak	0.0600	
Rincon H SF vs. West of Mkt Oak	alcoholi	Ceram	West Mkt Oak	0.0545	
Rincon H SF vs. West of Mkt Oak	alcoholf	Ceram	West Mkt Oak	0.0255	X
Rincon H SF vs. West of Mkt Oak	alcoholm	Ceram	West Mkt Oak	0.0585	
Rincon H SF vs. Oak Pt Oak	alcoholi	Glass	Rincon Hill SF	0.0453	X
Rincon H SF vs. Oak Pt Oak	alcoholf	Glass	Rincon Hill SF	0.0366	X
Rincon H SF vs. Oak Pt Oak	alcoholi	Both	Rincon Hill SF	0.0329	X
Rincon H SF vs. Oak Pt Oak	alcoholf	Both	Rincon Hill SF	0.0235	X
Rincon H SF vs. East of Mkt Oak	beeri	Glass	Rincon Hill SF	0.0860	
Rincon H SF vs. East of Mkt Oak	beerf	Glass	Rincon Hill SF	0.0709	
Rincon H SF vs. East of Mkt Oak	beeri	Ceram	East of Mkt Oak	0.0782	
Rincon H SF vs. East of Mkt Oak	beerf	Ceram	East of Mkt Oak	0.0258	X
Rincon H SF vs. East of Mkt Oak	beerm	Ceram	East of Mkt Oak	0.0600	
Rincon H SF vs. West of Mkt Oak	beeri	Glass	Rincon Hill SF	0.0155	X
Rincon H SF vs. West of Mkt Oak	beerf	Glass	Rincon Hill SF	0.0074	X
Rincon H SF vs. West of Mkt Oak	beerm	Glass	Rincon Hill SF	0.0285	X
Rincon H SF vs. West of Mkt Oak	beeri	Ceram	West Mkt Oak	0.0798	
Rincon H SF vs. West of Mkt Oak	beerf	Ceram	West Mkt Oak	0.0441	X
Rincon H SF vs. West of Mkt Oak	beerm	Ceram	West Mkt Oak	0.0797	

Significant Differences: ***(continued)***

City and Ethnicity	Variable	Material	Which has more?	Prob.	Sig @ 5%
Rincon H SF vs. Oak Pt Oak	beeri	Glass	Rincon Hill SF	0.0121	X
Rincon H SF vs. Oak Pt Oak	beerf	Glass	Rincon Hill SF	0.0083	X
Rincon H SF vs. Oak Pt Oak	beerm	Glass	Rincon Hill SF	0.0137	X
Rincon H SF vs. Oak Pt Oak	beeri	Both	Rincon Hill SF	0.0158	X
Rincon H SF vs. Oak Pt Oak	beerf	Both	Rincon Hill SF	0.0158	X
Rincon H SF vs. Oak Pt Oak	beerm	Both	Rincon Hill SF	0.0395	X
Rincon H SF vs. West of Mkt Oak	beeralci	Glass	Rincon Hill SF	0.0293	X
Rincon H SF vs. West of Mkt Oak	beeralcf	Glass	Rincon Hill SF	0.0147	X
Rincon H SF vs. West of Mkt Oak	beeralcm	Glass	Rincon Hill SF	0.0559	
Rincon H SF vs. Oak Pt Oak	beeralci	Glass	Rincon Hill SF	0.0197	X
Rincon H SF vs. Oak Pt Oak	beeralcf	Glass	Rincon Hill SF	0.0124	X
Rincon H SF vs. Oak Pt Oak	beeralcm	Glass	Rincon Hill SF	0.0460	X
Rincon H SF vs. Oak Pt Oak	beeralci	Both	Rincon Hill SF	0.0883	
Rincon H SF vs. Oak Pt Oak	beeralcf	Both	Rincon Hill SF	0.0541	
Rincon H SF vs. Oak Pt Oak	winei	Glass	Rincon Hill SF	0.0232	X
Rincon H SF vs. Oak Pt Oak	winef	Glass	Rincon Hill SF	0.0254	X
Rincon H SF vs. Oak Pt Oak	winei	Both	Rincon Hill SF	0.0163	X
Rincon H SF vs. Oak Pt Oak	winef	Both	Rincon Hill SF	0.0179	X
Rincon H SF vs. Oak Pt Oak	winealcf	Glass	Rincon Hill SF	0.0883	
Rincon H SF vs. Oak Pt Oak	winealcf	Both	Rincon Hill SF	0.0729	
Rincon H SF vs. Oak Pt Oak	liquorm	Both	Rincon Hill SF	0.0961	
Rincon H SF vs. East of Mkt Oak	tobaci	Glass	Rincon Hill SF	0.0127	X
Rincon H SF vs. East of Mkt Oak	tobacm	Glass	Rincon Hill SF	0.0127	X
Rincon H SF vs. East of Mkt Oak	tobaci	Both	Rincon Hill SF	0.0127	X
Rincon H SF vs. East of Mkt Oak	tobacm	Both	Rincon Hill SF	0.0127	X
Rincon H SF vs. East of Mkt Oak	foodi	Glass	Rincon Hill SF	0.0165	X
Rincon H SF vs. East of Mkt Oak	foodf	Glass	Rincon Hill SF	0.0262	X
Rincon H SF vs. East of Mkt Oak	foodm	Glass	Rincon Hill SF	0.0039	X
Rincon H SF vs. East of Mkt Oak	foodi	Both	Rincon Hill SF	0.0114	X
Rincon H SF vs. East of Mkt Oak	foodf	Both	Rincon Hill SF	0.0175	X
Rincon H SF vs. East of Mkt Oak	foodm	Both	Rincon Hill SF	0.0045	X

Significant Differences: ***(continued)***

City and Ethnicity	Variable	Material	Which has more?	Prob.	Sig @ 5%
Rincon H SF vs. West of Mkt Oak	foodi	Glass	Rincon Hill SF	0.0532	
Rincon H SF vs. West of Mkt Oak	foodm	Glass	Rincon Hill SF	0.0170	X
Rincon H SF vs. West of Mkt Oak	foodi	Ceram	Rincon Hill SF	0.0123	X
Rincon H SF vs. West of Mkt Oak	foodf	Ceram	Rincon Hill SF	0.0191	X
Rincon H SF vs. West of Mkt Oak	foodm	Ceram	Rincon Hill SF	0.0123	X
Rincon H SF vs. West of Mkt Oak	foodi	Both	Rincon Hill SF	0.0420	X
Rincon H SF vs. West of Mkt Oak	foodf	Both	Rincon Hill SF	0.0830	
Rincon H SF vs. West of Mkt Oak	foodm	Both	Rincon Hill SF	0.0057	X
Rincon H SF vs. East of Mkt Oak	fstori	Both	East of Mkt Oak	0.0640	
Rincon H SF vs. East of Mkt Oak	fstorf	Both	East of Mkt Oak	0.0609	
Rincon H SF vs. West of Mkt Oak	fstori	Ceram	Rincon Hill SF	0.0600	
Rincon H SF vs. West of Mkt Oak	fstorf	Ceram	Rincon Hill SF	0.0865	
Rincon H SF vs. West of Mkt Oak	fstorm	Ceram	Rincon Hill SF	0.0471	X
Rincon H SF vs. Oak Pt Oak	fstori	Both	Oak Pt Oak	0.0582	
Rincon H SF vs. Oak Pt Oak	fstorf	Both	Oak Pt Oak	0.0309	X
Rincon H SF vs. Oak Pt Oak	healthi	Glass	Oak Pt Oak	0.0328	X
Rincon H SF vs. Oak Pt Oak	healthf	Glass	Oak Pt Oak	0.0803	
Rincon H SF vs. Oak Pt Oak	healthm	Glass	Oak Pt Oak	0.0100	X
Rincon H SF vs. Oak Pt Oak	healthi	Both	Oak Pt Oak	0.0366	X
Rincon H SF vs. Oak Pt Oak	healthm	Both	Oak Pt Oak	0.0100	X
Rincon H SF vs. Oak Pt Oak	pati	Glass	Oak Pt Oak	0.0502	
Rincon H SF vs. Oak Pt Oak	patm	Glass	Oak Pt Oak	0.0059	X
Rincon H SF vs. Oak Pt Oak	pati	Both	Oak Pt Oak	0.0555	
Rincon H SF vs. Oak Pt Oak	patm	Both	Oak Pt Oak	0.0077	X
Rincon H SF vs. East of Mkt Oak	groomf	Both	Rincon Hill SF	0.0896	
Rincon H SF vs. West of Mkt Oak	groomf	Glass	Rincon Hill SF	0.0738	
Rincon H SF vs. West of Mkt Oak	groomf	Both	Rincon Hill SF	0.0822	
Rincon H SF vs. East of Mkt Oak	asiai	Ceram	Rincon Hill SF	0.0022	X
Rincon H SF vs. East of Mkt Oak	asiaf	Ceram	Rincon Hill SF	0.0022	X
Rincon H SF vs. East of Mkt Oak	asiam	Ceram	Rincon Hill SF	0.0022	X
Rincon H SF vs. East of Mkt Oak	asiai	Both	Rincon Hill SF	0.0033	X

Significant Differences: ***(continued)***

City and Ethnicity	Variable	Material	Which has more?	Prob.	Sig @ 5%
Rincon H SF vs. East of Mkt Oak	asiaf	Both	Rincon Hill SF	0.0033	X
Rincon H SF vs. East of Mkt Oak	asiam	Both	Rincon Hill SF	0.0033	X
Rincon H SF vs. East of Mkt Oak	wholei	Ceram	Rincon Hill SF	0.0071	X
Rincon H SF vs. East of Mkt Oak	wholef	Ceram	Rincon Hill SF	0.0071	X
Rincon H SF vs. East of Mkt Oak	wholem	Ceram	Rincon Hill SF	0.0176	X
Rincon H SF vs. Oak Pt Oak	wholei	Ceram	Rincon Hill SF	0.0784	
Rincon H SF vs. Oak Pt Oak	wholef	Ceram	Rincon Hill SF	0.0784	
Within San Francisco:					
Mission Bay SF vs. Rincon Hill SF	alcoholf	Ceram	Mission Bay SF	0.0807	
Mission Bay SF vs. Rincon Hill SF	beerf	Ceram	Mission Bay SF	0.0807	
Within Oakland:					
Oak Pt Oak vs. West of Mkt Oak	beeralci	Both	West Mkt Oak	0.0803	
Oak Pt Oak vs. West of Mkt Oak	beeralcm	Both	West Mkt Oak	0.0916	
Oak Pt Oak vs. West of Mkt Oak	liqalcf	Both	West Mkt Oak	0.0972	
Oak Pt Oak vs. East of Mkt Oak	tobaci	Glass	Oak Pt Oak	0.0806	
Oak Pt Oak vs. East of Mkt Oak	tobacm	Glass	Oak Pt Oak	0.0806	
Oak Pt Oak vs. East of Mkt Oak	tobaci	Both	Oak Pt Oak	0.0806	
Oak Pt Oak vs. East of Mkt Oak	tobacm	Both	Oak Pt Oak	0.0806	
Oak Pt Oak vs. West of Mkt Oak	foodm	Glass	Oak Pt Oak	0.0586	
Oak Pt Oak vs. West of Mkt Oak	foodm	Both	Oak Pt Oak	0.0147	X
Oak Pt Oak vs. East of Mkt Oak	foodm	Glass	Oak Pt Oak	0.0192	X
Oak Pt Oak vs. East of Mkt Oak	foodm	Both	Oak Pt Oak	0.0118	X
East of Mkt Oak vs. West Mkt Oak	fstori	Ceram	East of Mkt Oak	0.0190	X
East of Mkt Oak vs. West Mkt Oak	fstorf	Ceram	East of Mkt Oak	0.0410	X
East of Mkt Oak vs. West Mkt Oak	fstorm	Ceram	East of Mkt Oak	0.0232	X
Oak Pt Oak vs. West of Mkt Oak	fstori	Ceram	Oak Pt Oak	0.0032	X
Oak Pt Oak vs. West of Mkt Oak	fstorf	Ceram	Oak Pt Oak	0.0068	X
Oak Pt Oak vs. West of Mkt Oak	fstorm	Ceram	Oak Pt Oak	0.0041	X
Oak Pt Oak vs. West of Mkt Oak	healthm	Both	Oak Pt Oak	0.0819	
Oak Pt Oak vs. East of Mkt Oak	healthm	Glass	Oak Pt Oak	0.0264	X
Oak Pt Oak vs. East of Mkt Oak	healthm	Both	Oak Pt Oak	0.0185	X

Significant Differences: ***(continued)***

City and Ethnicity	Variable	Material	Which has more?	Prob.	Sig @ 5%
Oak Pt Oak vs. West of Mkt Oak	patm	Glass	Oak Pt Oak	0.0603	
Oak Pt Oak vs. West of Mkt Oak	patm	Both	Oak Pt Oak	0.0325	X
Oak Pt Oak vs. East of Mkt Oak	patm	Glass	Oak Pt Oak	0.0464	X
Oak Pt Oak vs. East of Mkt Oak	patm	Both	Oak Pt Oak	0.0302	X
East of Mkt Oak vs. West of Mkt	patdrugm	Glass	East of Mkt Oak	0.0805	
East of Mkt Oak vs. West of Mkt	patdrugm	Both	East of Mkt Oak	0.0805	
Oak Pt Oak vs. West of Mkt Oak	patdrugi	Glass	Oak Pt Oak	0.0365	X
Oak Pt Oak vs. West of Mkt Oak	patdrugm	Glass	Oak Pt Oak	0.0422	X
Oak Pt Oak vs. West of Mkt Oak	patdrugi	Both	Oak Pt Oak	0.0365	X
Oak Pt Oak vs. West of Mkt Oak	patdrugm	Both	Oak Pt Oak	0.0422	X
Oak Pt Oak vs. East of Mkt Oak	asiai	Ceram	Oak Pt Oak	0.0088	X
Oak Pt Oak vs. East of Mkt Oak	asiaf	Ceram	Oak Pt Oak	0.0089	X
Oak Pt Oak vs. East of Mkt Oak	asiam	Ceram	Oak Pt Oak	0.0089	X
Oak Pt Oak vs. East of Mkt Oak	asiai	Both	Oak Pt Oak	0.0096	X
Oak Pt Oak vs. East of Mkt Oak	asiaf	Both	Oak Pt Oak	0.0096	X
Oak Pt Oak vs. East of Mkt Oak	asiam	Both	Oak Pt Oak	0.0096	X
East of Mkt Oak vs. West Mkt Oak	wholei	Glass	West Mkt Oak	0.0935	
East of Mkt Oak vs. West Mkt Oak	wholef	Glass	West Mkt Oak	0.0935	
East of Mkt Oak vs. West Mkt Oak	wholem	Glass	West Mkt Oak	0.0410	X
East of Mkt Oak vs. West Mkt Oak	wholei	Ceram	West Mkt Oak	0.0164	X
East of Mkt Oak vs. West Mkt Oak	wholef	Ceram	West Mkt Oak	0.0515	
East of Mkt Oak vs. West Mkt Oak	wholem	Ceram	West Mkt Oak	0.0261	X
East of Mkt Oak vs. West Mkt Oak	wholei	Both	West Mkt Oak	0.0240	X
East of Mkt Oak vs. West Mkt Oak	wholef	Both	West Mkt Oak	0.0240	X
East of Mkt Oak vs. West Mkt Oak	wholem	Both	West Mkt Oak	0.0153	X
Oak Pt Oak vs. East of Mkt Oak	wholei	Both	Oak Pt Oak	0.0961	
Oak Pt Oak vs. East of Mkt Oak	wholef	Both	Oak Pt Oak	0.0961	

The tables below summarize these comparisons between neighborhoods.

Key: The first letter of the neighborhood that ranks higher for the given variable is indicated in lower case for a difference significant at the 10% level, or upper case for a difference significant at the 5% level. Since each variable is measured in up to nine ways (by items, fragments, and MNI, each within glass containers, ceramic containers, or both), there may be up to nine letters per cell. Where there are no significant differences, a + indicates that the percentage data generally agree with the city-level pattern, and a - indicates that the percentage data contradict the city-level pattern. These symbols appear only on the lines that contrast neighborhoods in different cities, and only in columns for which a significant difference is noted at the city level, as indicated on the bottom line.

Comparison	**alcohol glass, both**	**alcohol ceramic**	**beer glass, both**	**beer ceramic**	**wine**	**liquor**
Mission B vs. East of Mkt	+	+	MMmmmm	+	+	-
Mission B vs. West Mkt	+	+	MMM	+	+	-
Mission B vs. Oak Pt	MMMm	+	MMMMMM	+	mm	+
Mission B vs. Rincon H		m		m		
Rincon H vs. East of Mkt	+	Eee	rr	Eee	+	-
Rincon H vs. West Mkt	+	Www	RRR	Www	+	-
Rincon H vs. Oak Pt	RRRR	+	RRRRRR	+	RRRR	r
West of Mkt vs. East Mkt						
West of Mkt vs. Oak Pt						
East of Mkt vs. Oakd Pt						
All SF vs. all Oakland	SSSSs	oo	SSSSSS	o	SSsss	ssss

Comparison	beer/alc	wine/alc	whole glass	whole ceramic, both	food	food storage
Mission B vs. East of Mkt	+			mm	MM	ee
Mission B vs. West Mkt	Mm			w	MMM MM	MMM
Mission B vs. Oak Pt	MMM m			-	+	OO
Mission B vs. Rincon H						
Rincon H vs. East of Mkt	+			RRR	RRRRR R	ee
Rincon H vs. West Mkt	RRr			-	RRRRR Rrr	Rrr
Rincon H vs. Oak Pt	RRRrr	rr		rr	+	Oo
West of Mkt vs. East Mkt			Www	WWWWWw		EEE
West of Mkt vs. Oak Pt	ww			oo	Oo	OOO
East of Mkt vs. Oakd Pt					OO	
All SF vs. all Oakland	SSSs			Ss	SSSSSss	OO

Comparison	health	patent medicine	patent/all medicines	grooming	Asia
Mission B vs. East of Mkt	+	+			MMMMMM
Mission B vs. West Mkt	+	+			MMMMmm
Mission B vs. Oak Pt	OOOOOo	OOoooo			+
Mission B vs. Rincon H					
Rincon H vs. East of Mkt	+	+		r	RRRRRR
Rincon H vs. West Mkt	+	+		rr	-
Rincon H vs. Oak Pt	OOOOo	OOoo			-
West of Mkt vs. East Mkt			ee		
West of Mkt vs. Oak Pt	o	Oo	OOOO		
East of Mkt vs. Oak Pt	OO	OO			OOOOOO
All SF vs. all Oakland	OOOOoo	oo			SSSSSS

Interpretations:

As noted earlier, there were few significant differences between the two neighborhoods in San Francisco. Each of these neighborhoods, however, differed from the various neighborhoods of Oakland in generally the same ways as the two cities

differed as a whole. Once again, most of the city-level differences seem to crosscut within-city categories.

Both San Francisco neighborhoods had higher proportions of glass and combined alcohol bottles than did the Oakland Point neighborhood, with varying confidence on multiple measures each, albeit not the most conservative "percent of MNI" measure. While the San Francisco neighborhoods did not differ from the other two Oakland neighborhoods in glass and combined alcohol bottles strongly enough to be significant, the percentage data suggest that the city-level pattern of greater alcohol consumption in San Francisco probably held for all of the neighborhoods. Both San Francisco neighborhoods had higher proportions of glass and combined beer bottles than did any of the Oakland neighborhoods. This pattern was significant at 5% confidence on multiple measures for every combination of neighborhoods except Rincon Hill compared to East of Market, where the pattern was indicated at 10% confidence on two measures. Similarly, both San Francisco neighborhoods had a greater emphasis on beer as a fraction of their alcohol purchases than did West of Market and Oakland Point. While the percentage data suggest the same pattern with respect to the East of Market neighborhood, it is not statistically significant.

As noted at the city level, these patterns are exactly reversed for ceramic alcohol bottles in general and ceramic beer and ale bottles in particular, which are mostly the same items. While the greater consumption of alcoholic beverages in ceramic bottles is statistically significant only for East and West of Market in comparison to Rincon Hill, the percentage data indicate that the same pattern probably holds for all the Oakland and San Francisco neighborhoods. While the number of ceramic beer bottles recovered from San Francisco was limited enough to cast doubts on the interpretation of their within-city distribution patterns, the total of 219 ceramic bottles in the two cities combined should be quite sufficient to indicate a broad behavioral pattern.

Differences in wine consumption were only significant in comparisons between both San Francisco neighborhoods and Oakland Point. While the percentage data suggest that all of the Oakland neighborhoods consumed less wine than did the San Francisco neighborhoods, the differences are very small and probably should not be considered important. Differences in liquor consumption were significant in just one the neighborhood comparisons, at 10% confidence on a single measure. The percentage data are equivocal and contradictory for liquor consumption by neighborhood. The patterns in wine and liquor consumption do not crosscut the neighborhoods as clearly as does the broadly based San Franciscan emphasis on drinking in general and beer in specific, or the broadly based Oakland preference for beer in ceramic bottles.

The tendency of San Franciscan households to purchase more prepared food in glass and ceramic containers than did Oakland households also crosscut the neighborhoods. The pattern is significant with 5% confidence on multiple measures for all cross-city comparisons except those involving the Oakland Point neighborhood, and the percentage data suggest that those Oakland Point households did reflect the Oakland pattern, but just not strongly enough to prove significant. Within Oakland,

Oakland Point households consumed significantly more foods packed in glass and ceramic containers than did households in the other two neighborhoods, but not enough more to rival any of the San Francisco neighborhoods.

The patterning in food-storage containers is more complex. At the city level, Oakland households seem to have used more of these glass and ceramic containers for food that they preserved at home or purchased from cottage producers than did San Franciscan households. While this pattern holds for both Oakland Point and the East of Market neighborhoods in comparison to both neighborhoods in San Francisco, households in the West of Market neighborhood seem to have used fewer of these containers than did their Oakland neighbors or than did households in either neighborhood in San Francisco. This is one of the few clear failures of the crosscutting quality of the city-level patterns. As such, it could point to something worth pursuing about the West of Market neighborhood, food stored in containers at home or by cottage industry, or both.

Households in Oakland, and especially households in Oakland Point, consumed more medicines overall, as well as more patent medicines, than did households in San Francisco. This pattern is significant with 5% confidence on multiple measures for Oakland Point, while the percentage data suggest the same for the other neighborhoods without rising to the level of statistical significance. Households in Oakland Point purchased a higher proportion of patent medicines in their mix of medicines in general than did households in other Oakland neighborhoods, with 5% confidence on four measures. The percentage data indicate that this relatively greater preference for patent medicines was about the same as in both neighborhoods in San Francisco. The total medicine consumption was higher in Oakland, and especially Oakland Point, but the Oakland Pointers had roughly the same preferences regarding patent medicines versus medicines in embossed bottles from apothecaries as did San Franciscans. The percentage data suggest that Oaklanders in the other neighborhoods may have been somewhat less likely to opt for patent medicines, and slightly more likely to purchase medicines from a druggist or apothecary.

People in the Rincon Hill neighborhood may have purchased a somewhat higher proportion of grooming products in glass and ceramic containers than did those in the East and West of Market neighborhoods, but this pattern is significant only at 10% confidence on the "percentage of fragments" measure. The percentage data for measures of grooming containers are inconsistent and do not suggest large differences, in any case.

Mission Bay households consumed more products in containers from Asia than did households East or West of Market, with 5% confidence on numerous measures, and probably more than households in Oakland Point, although that is only suggested by the percentage data. Rincon Hill households also used more Asian containers than did households in East of Market, again with 5% confidence on multiple measures. However, the Rincon Hill households did not use more Asian containers than did those in the other two Oakland neighborhoods, and in fact the percentage data suggests the

reverse, albeit not significantly. In other words, the greater consumption of goods in Asian containers was concentrated Mission Bay, but less clearly so in Rincon Hill. In Oakland, the use of containers from Asia was lowest in the East of Market neighborhood, and may have been highest in Oakland Point, although the evidence is not clear.

In the analysis of meat-cut data, I suggested a general ranking of neighborhoods based on the mix of meat-cut costs, ranging from the apparently most prosperous Rincon Hill neighborhood, through the East of Market, West of Market, and Oakland Point neighborhoods, to the markedly less prosperous Mission Bay neighborhood. Most of the container data do not correspond well to this ranking, since the containers from the two San Francisco neighborhoods are similar, rather than at opposite ends of a continuum with all of Oakland in between. The table below illustrates this poor fit, showing some representative "percent of MNI" values in the ranking order derived from the meat cut cost analysis, with the neighborhood with the most expensive mix of cuts shown at the top.

Neighborhood	n	alcoholm both	beerm both	foodm both	fstorm both	asiam both	healthm both	patm both	groom both	wholem glass
Rincon Hill, SF	10	24	11	6	3	0.4	5	4	17	25
East of Mkt, Oak	20	22	9	4	5	0.0	8	6	13	20
West of Mkt, Oak	17	24	12	0	4	0.7	9	6	13	35
Oakland Pt, Oak	20	20	6	2	6	1.1	11	9	13	27
Mission Bay, SF	8	30	14	4	4	1.3	7	6	10	21

The fact that the city-level patterns in alcohol, beer, packaged foods, food-storage containers, medicines in general, and patent-medicine consumption do not correspond to the neighborhood-level patterns in expenditures on meat cuts suggests that these city-level patterns may have had causes other than simple economic ones. It is unlikely, for example, that the San Franciscan sample emphasizes alchohol and beer consumption because it is taken from households of a lower (or higher) socioeconomic status, because the meat data indicate that both the highest and lowest economic statuses are represented by the San Francisco neighborhoods. That is, the differences between neighborhoods appear to be mostly attributable not to the economic factors that affected peoples' choices about buying more or less expensive meat cuts, but rather simply to which city they lived in. As noted before, city-level patterns require city-level explanations. Such explanations would probably be geographic, as in differential access to goods due to their positions in transportation networks, but might also be cultural, to the extent that values were shared across most or all kinds of households in each city.

On the other hand, containers of grooming products and containers from Asia do fit this economic hierarchy fairly well, with grooming products increasing along with the cost of the meat cuts in the diet, and products of Asian origin declining with increasingly expensive mixes of meat cuts. This may suggest that the use of these two kinds of goods was more affected by economic factors, rather than cultural or market differences between the two cities. This hypothesis should be further tested; it is only hinted at, not demonstrated, by these data.

Interestingly, the Oakland Point neighborhood, which was classified as the least prosperous of the Oakland neighborhoods by the meat-cut cost criteria, remains the most extreme of the Oakland neighborhoods in its contrast to San Francisco on many of the variables shown. This percentage data suggests that Oakland Point has the smallest proportion of alcoholic-beverage containers, beer and ale bottles, and the second smallest proportion of food-storage containers. According to the percentage data, Oakland Point has the highest proportion of food-storage containers, medicine bottles in general, and patent-medicine bottles. Once again, the grooming containers and containers from Asia are patterned differently from the rest. As noted above, Oakland Point differs significantly from one or both San Francisco neighborhoods on alcoholic beverage containers in general, wine bottles, medicines in general, and patent medicines, while the other two neighborhoods do not. Overall, it may be that Oakland Point was something of an outlier among the Oakland neighborhoods on a broad variety of measures, and that on many but not all of them, the households of Oakland Point were the most extreme expressions of the differences between Oakland and San Francisco.

Finally, there are no significant patterns in the recycling of whole glass bottles by neighborhood, with one strong exception in Oakland. Households in the West of Market neighborhood threw away more whole bottles than did households East of Market, with 10 or 5% confidence on all three measures. Although the differences with other neighborhoods are not significant, the percentage data suggest that West of Market may have differed in the same way from all the neighborhoods in both cities, which varied in a narrower range in their recycling habits. That is, people in the West of Market neighborhood probably recycled less than all others, in both cities. Since this dubious honor does not correspond to particularly high or low socioeconomic standing by other measures, nor to other patterns in bottle consumption, it is tempting to suspect some spatially specific explanation, such as a relative scarcity of bottle buyers West of Market.

OCCUPATION IN SAN FRANCISCO AND OAKLAND COMBINED

Occupation Category	n	wholei glass	wholef glass	wholem glass	n	alcoholi both	alcoholf both	alcoholm both
Wealthy prof.	6	5	5	25	6	29	31	18
Professional	13	8	9	24	13	30	32	22
Skilled	31	7	11	25	31	31	32	25
Unskilled	8	7	9	22	8	32	32	20
Total:	58	7	10	24	58	31	32	23

Occupation Category	n	beeri both	beerf both	beerm both	n	beeralci glass	beeralcf glass	beeralcm glass
Wealthy prof.	6	5	5	3	6	15	15	14
Professional	13	11	11	8	13	22	22	21
Skilled	31	12	12	13	31	28	28	34
Unskilled	8	14	14	9	8	27	27	26
Total:	58	11	11	10	58	25	25	28

Occupation Category	n	beeralci both	beeralcf both	beeralcm both	n	winei glass	winef glass	winem glass
Wealthy prof.	6	16	15	16	6	13	13	8
Professional	13	31	31	30	13	13	14	7
Skilled	31	36	35	44	31	7	7	5
Unskilled	8	35	36	37	8	4	5	2
Total:	58	33	32	37	58	8	9	5

Occupation Category	n	winei both	winef both	winem both	n	winealci glass	winealcf glass	winealcm glass
Wealthy prof.	6	12	13	8	6	36	36	40
Professional	13	12	13	7	13	40	40	36
Skilled	31	6	6	4	31	22	22	22
Unskilled	8	4	5	2	8	17	17	12
Total:	58	8	8	5	58	27	27	26

Occupation in San Francisco and Oakland combined *(continued)*

Occupation Category	n	winealci both	winealcf both	winealcm both	n	tobaci glass	tobacf glass	tobacm glass
Wealthy prof.	6	36	36	39	6	0.0	0.0	0.1
Professional	13	37	37	33	13	0.3	0.2	0.5
Skilled	31	19	19	18	31	0.1	0.0	0.3
Unskilled	8	16	17	10	8	0.1	0.0	0.4
Total:	58	25	25	23	58	0.1	0.1	0.3

Occupation Category	n	tobaci both	tobacf both	tobacm both	n	foodi ceram	foodf ceram	foodm ceram
Wealthy prof.	6	0.0	0.0	0.1	5	9	11	6
Professional	13	0.3	0.2	0.4	10	7	8	3
Skilled	31	0.1	0.0	0.3	28	2	2	3
Unskilled	8	0.1	0.0	0.4	6	0	0	0
Total:	58	0.1	0.1	0.3	49	3	4	3

Occupation Category	n	healthi glass	healthf glass	healthm glass	n	healthi both	healthf both	healthm both
Wealthy prof.	6	4	4	5	6	3	3	5
Professional	13	6	4	8	13	5	3	7
Skilled	31	10	10	11	31	9	8	10
Unskilled	8	8	7	11	8	8	6	10
Total:	58	8	7	10	58	7	6	9

Occupation Category	n	drugi glass	drugf glass	drugm glass	n	patdrugi glass	patdrugf glass	patdrugm glass
Wealthy prof.	6	0.7	0.7	0.8	6	77	75	86
Professional	13	0.9	0.3	1.4	13	92	94	89
Skilled	31	3.9	3.7	3.3	31	80	79	77
Unskilled	8	1.1	1.0	1.6	8	85	80	84
Total:	58	2.5	2.2	2.4	58	83	81	81

Occupation in San Francisco and Oakland combined *(continued)*

Occupation Category	n	groomi ceram	groomf ceram	groomm ceram	n	writingi ceram	writingf ceram	writingm ceram
Wealthy prof.	5	3	3	9	5	4	0	13
Professional	10	14	9	12	10	13	9	13
Skilled	28	1	1	1	28	5	4	5
Unskilled	6	15	17	8	6	0	0	0
Total:	49	6	5	5	49	6	4	7

Occupation Category	n	wholei ceram	wholef ceram	wholem ceram
Wealthy prof.	5	12	18	28
Professional	10	13	32	17
Skilled	28	10	16	13
Unskilled	6	8	10	21
Total:	49	10	18	16

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

All Pairs of occupation categories

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Occupation Comparisons:	Variable	Material	Which has more?	Prob.	Sig @ 5%
Wealthy Professional vs. Skilled	beerm	Both	Skilled	0.0600	
Wealthy Professional vs. Skilled	beeralcm	Glass	Skilled	0.0831	
Wealthy Professional vs. Skilled	beeralci	Both	Skilled	0.0740	
Wealthy Professional vs. Skilled	beeralcf	Both	Skilled	0.0888	
Wealthy Professional vs. Skilled	beeralcm	Both	Skilled	0.0227	X
Professional vs. Skilled	winef	Glass	Professional	0.0681	
Professional vs. Skilled	winem	Glass	Professional	0.0824	
Professional vs. Unskilled	winei	Glass	Professional	0.0727	

Significant Differences: ***(continued)***

Occupation Comparisons:	Variable	Material	Which has more?	Prob.	Sig @ 5%
Professional vs. Unskilled	winef	Glass	Professional	0.0851	
Professional vs. Unskilled	winem	Glass	Professional	0.0209	X
Professional vs. Skilled	winef	Both	Professional	0.0928	
Professional vs. Skilled	winem	Both	Professional	0.0619	
Professional vs. Unskilled	winei	Both	Professional	0.0993	
Professional vs. Unskilled	winem	Both	Professional	0.0255	X
Professional vs. Skilled	winealci	Glass	Professional	0.0725	
Professional vs. Skilled	winealcf	Glass	Professional	0.0526	
Professional vs. Skilled	winealcm	Glass	Professional	0.0789	
Professional vs. Unskilled	winealci	Glass	Professional	0.0936	
Professional vs. Unskilled	winealcf	Glass	Professional	0.0936	
Professional vs. Unskilled	winealcm	Glass	Professional	0.0252	X
Professional vs. Skilled	winealci	Both	Professional	0.0459	X
Professional vs. Skilled	winealcf	Both	Professional	0.0336	X
Professional vs. Skilled	winealcm	Both	Professional	0.0300	X
Professional vs. Unskilled	winealci	Both	Professional	0.0936	
Professional vs. Unskilled	winealcf	Both	Professional	0.0936	
Professional vs. Unskilled	winealcm	Both	Professional	0.0224	X
Professional vs. Skilled	tobacf	Glass	Professional	0.0297	X
Professional vs. Skilled	tobacf	Both	Professional	0.0297	X
Wealthy prof. vs. Professional	foodi	Ceram	Wealthy prof.	0.0989	
Wealthy prof. vs. Professional	foodf	Ceram	Wealthy prof.	0.0989	
Wealthy prof. vs. Professional	foodm	Ceram	Wealthy prof.	0.0989	
Wealthy Professional vs. Skilled	foodi	Ceram	Wealthy prof.	0.0081	X
Wealthy Professional vs. Skilled	foodf	Ceram	Wealthy prof.	0.0096	X
Wealthy Professional vs. Skilled	foodm	Ceram	Wealthy prof.	0.0187	X
Wealthy prof. vs. Unskilled	foodi	Ceram	Wealthy prof.	0.0484	X
Wealthy prof. vs. Unskilled	foodf	Ceram	Wealthy prof.	0.0484	X
Wealthy prof. vs. Unskilled	foodm	Ceram	Wealthy prof.	0.0484	X
Wealthy Professional vs. Skilled	healthi	Glass	Skilled	0.0871	
Wealthy Professional vs. Skilled	healthm	Glass	Skilled	0.0729	

Significant Differences: ***(continued)***

Occupation Comparisons:	Variable	Material	Which has more?	Prob.	Sig @ 5%
Professional vs. Skilled	healthf	Glass	Skilled	0.0545	
Professional vs. Skilled	healthm	Glass	Skilled	0.0601	
Wealthy Professional vs. Skilled	healthm	Both	Skilled	0.0833	
Professional vs. Skilled	healthi	Both	Skilled	0.0844	
Professional vs. Skilled	healthf	Both	Skilled	0.0401	X
Professional vs. Skilled	healthm	Both	Skilled	0.0694	
Professional vs. Skilled	drugm	Glass	Skilled	0.0955	
Wealthy Professional vs. Skilled	groomi	Ceram	Wealthy prof.	0.0569	
Wealthy Professional vs. Skilled	groomf	Ceram	Wealthy prof.	0.0641	
Wealthy Professional vs. Skilled	groomm	Ceram	Wealthy prof.	0.0463	X
Professional vs. Skilled	writingi	Ceram	Professional	0.0470	X
Professional vs. Skilled	writingf	Ceram	Professional	0.0336	X
Professional vs. Skilled	writingm	Ceram	Professional	0.0499	X
Wealthy Professional vs. Skilled	wholem	Ceram	Wealthy prof.	0.0703	

Interpretations:

Lumping all households of similar occupations in both cities increases the sample sizes for each occupation category, and in that sense should improve the sensitivity of tests for general differences between occupation categories in the San Francisco Bay area overall prior to 1890. However, since there are known to be systematic differences between households of any given occupation category in San Francisco and their counterparts in Oakland, any patterns in these lumped occupation groupings will be influenced by differential representation of the two cities in these lumped samples. For example, the wealthy professional sample is made up of 3 San Francisco households and 3 Oakland households, or 50% San Franciscans. The occupation category is made up of 3 San Francisco households and 10 Oakland households, or only 23% San Franciscans. Thus the lumped wealthy professional category will reflect any San Franciscan city-wide tendencies more strongly than will the lumped occupation category, and differences between them might be due to city-level differences rather than the differences between occupations. Fortunately, the professional, skilled, and unskilled categories are roughly comparable in this sense (see the table below), so only patterns involving wealthy professionals are likely to have this problem to a serious degree. In comparisons in which the wealthy professional category differs from others in the same way that San Francisco differs from Oakland, it is not clear whether the pattern relates to the professions or to the greater representation of San Franciscans in the wealthy professional sample. In comparisons in which the wealthy professionals differ in the

opposite way from the difference between San Francisco and Oakland, the pattern is strongly supported, because it is overcoming the bias due to the excess of San Franciscans in the wealthy professional sample.

Occupation Category	SF Households	Oakland Households	Total Households	% SF
Wealthy Professional	3	3	6	50%
Professional	3	10	13	23%
Skilled	9	22	31	29%
Unskilled	2	6	8	25%

In the interest of brevity (!), this analysis treats only comparisons between single occupation categories, not the lumped occupation categories used for the within-city analysis.

Neither the significance tests nor the percentage data indicate any real difference in the consumption of alcohol overall among the different occupation categories. The occupation categories, however, do appear to have differed in their relative preferences for different types of alcoholic beverages. The percentage data suggest that from wealthy professionals, through professionals, to skilled workers, the lower the occupational status, the greater the beer consumption. Unskilled workers reverse the trend in the percentage data, however, consuming less beer than skilled workers, about the same as professionals, but still more than the apparently beer-averse wealthy professionals. This status bias against beer is significant only between wealthy professional households and skilled workers' households, expressed in various measures of both the fraction of container that held beer and the fraction of alcoholic beverage containers that held beer. This is a particularly convincing result, since it overcomes the city-level pattern of greater beer consumption among San Franciscans, which would be expected to bias the wealthy professional sample towards measures of higher beer consumption.

Reinforcing a trend noted in the Cypress Project analysis, professionals consumed relatively more wine than did skilled workers and unskilled workers, both in terms of total containers and as a fraction of alcoholic beverages consumed. These patterns are significant with 10 or 5% confidence on numerous different measures. The percentage data suggest that this pattern of greater wine consumption with higher professional status applies to all four occupational categories by most measures, although the difference in wine consumption between professionals and wealthy professionals is small and sometimes reverses the status order. The fact that this association of wine with people in higher-status occupations is strengthened by adding the San Francisco data to the larger Cypress dataset suggests that the association may indeed be real and regional, even though it shows up only weakly in the small San Francisco dataset alone.

The percentage data suggest a consistent pattern of greater consumption of food packaged in ceramic containers with higher occupational status. This pattern is significant only in comparisons involving the wealthy professional category, which has both the highest consumption of such packaged foods and the highest representation of San Francisco households, which had a city-wide tendency to buy more of these food containers. This makes the role of the occupation categories in these patterns suspect. Without further analysis, this association of foods packaged in ceramic containers with households of higher professional status remains a plausible but tentative hypothesis.

The percentage data also suggest a modest trend towards greater use of medicines in general with lower professional status. As with beer consumption, the unskilled households either do not differ from the skilled workers, or they reverse this trend, but they still have higher proportions of medicine containers than professional or wealthy professional households. This pattern is significant on several measures of comparisons between wealthy professionals and skilled workers, and between professionals and skilled workers, mostly with 10% confidence. Many interpretations suggest themselves. Workers in the lower-status occupations may have suffered from more ailments requiring medication, they may have been more inclined to medicate for other reasons, or they may have been more susceptible to marketing of medicines. According to one comparison, skilled households may have consumed slightly more medicines in embossed bottles from druggists or apothecaries, by the MNI measure with 10% confidence. No other significant results reinforce this finding, however, and the percentage data do not indicate any clear pattern, so any conclusion about differing relative preferences for apothecaries' wares as opposed to patent medicines by professional status is probably unwarranted.

Finally, there are several patterns by occupation category in rare items, although the interpretation of these is problematic. Despite the statistically significant difference between professional and skilled households, the percentage data for tobacco (snuff) containers do not suggest any coherent pattern, nor any large differences between the occupation categories, other than a weak hint of less snuff use among the wealthy professional households. With a total of only 25 such containers from San Francisco and Oakland combined, their distribution probably reflects just a few purchases by a few snuff users who happened to be not quite uniformly distributed among the professional categories. Significant patterns in ceramic containers for grooming products and ceramic containers related to writing are even less likely to indicate general behavioral tendencies, since there are only12 and 13 examples of each of these kinds of containers, respectively. The percentage data for the grooming containers does not suggest any general pattern, while the percentages for ceramic writing containers does hint that they may have been more common among professionals and wealthy professionals. With samples this small, however, that pattern should be interpreted with considerable skepticism.

ETHNICITIES IN SAN FRANCISCO AND OAKLAND COMBINED

(only those that are represented in both cities are shown)

Ethnicity	n	wholei glass	wholef glass	wholem glass	n	alcoholi glass	alcoholf glass	alcoholm glass
German	9	6	6	21	9	31	32	23
Irish	19	7	9	24	19	38	39	27
U.S. white	19	9	15	26	19	29	30	19
All known	60	7	10	25	60	31	32	22

Ethnicity	n	liquori glass	liquorf glass	liquorm glass	n	liquori both	liquorf both	liquorm both
German	9	1.5	1.5	1.5	9	1.4	1.5	1.4
Irish	19	2.8	2.8	1.5	19	2.7	2.7	1.4
U.S. white	19	0.7	0.7	0.6	19	0.6	0.6	0.5
All known	60	1.8	1.8	1.2	60	1.7	1.7	1.2

Ethnicity	n	liqalci glass	liqalcf glass	liqalcm glass	n	liqalci both	liqalcf both	liqalcm both
German	9	5	5	7	9	5	5	6
Irish	19	9	7	8	19	8	7	7
U.S. white	19	2	1	3	19	1	1	2
All known	60	6	5	6	60	5	5	5

Ethnicity	n	foodi glass	foodf glass	foodm glass	n	foodi both	foodf both	foodm both
German	9	16	16	15	9	15	16	15
Irish	19	10	10	12	19	10	10	11
U.S. white	19	22	25	15	19	20	24	14
All known	60	17	18	15	60	15	17	14

Ethnicity	n	fstori both	fstorf both	fstorm both	n	patdrugi glass	patdrugf glass	patdrug m glass
German	9	3	4	4	9	53	52	66
Irish	19	8	8	4	19	79	80	75
U.S. white	19	13	14	6	19	93	95	92
All known	60	9	10	5	60	83	82	81

Ethnicities in San Francisco and Oakland Combined *(continued)*

Ethnicity	n	patdrugi both	patdrugf both	patdrug m both	n	drugi glass	drugf glass	drugm glass
German	9	53	52	66	9	9	9	4
Irish	19	79	80	75	19	2	1	2
U.S. white	19	93	95	92	19	1	1	2
All known	60	83	82	81	60	2	2	2

Ethnicity	n	drugi both	drugf both	drugm both	n	writingi glass	writingf glass	writing m glass
German	9	8	8	4	9	0.1	0.0	0.4
Irish	19	2	1	2	19	1.0	1.0	1.6
U.S. white	19	1	1	2	19	2.7	1.9	3.4
All known	60	2	2	2	60	1.4	1.0	2.0

Ethnicity	n	writingi both	writingf both	writing m both	n	tobaci glass	tobacf glass	tobacm glass
German	9	0.1	0.0	0.4	9	0.0	0.0	0.0
Irish	19	1.1	1.0	1.8	19	0.1	0.0	0.3
U.S. white	19	2.4	1.6	3.3	19	0.0	0.0	0.0
All known	60	1.4	1.0	2.2	60	0.1	0.1	0.3

Ethnicity	n	tobaci both	tobacf both	tobacm both	n	wholei ceram	wholef ceram	wholem ceram
German	9	0.0	0.0	0.0	6	11	20	15
Irish	19	0.1	0.0	0.3	14	10	14	21
U.S. white	19	0.0	0.0	0.0	18	8	3	13
All known	60	0.1	0.0	0.3	50	11	19	17

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

All pairs of common ethnicities

Each of the four common ethnicities vs. the other three lumped together

Each of the four common ethnicities vs. all the others lumped together, including mixed ones (not listed in the table above)

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Ethnicity	Variable	Material	Which has more?	Prob.	Sig @ 5%
German vs. all others	drugf	Glass	German	0.0716	
German vs. all others	drugf	Both	German	0.0756	
German vs. all others	patdrugi	Glass	Others	0.0232	X
German vs. all others	patdrugf	Glass	Others	0.0226	X
German vs. all others	patdrugm	Glass	Others	0.0685	
German vs. all others	patdrugi	Both	Others	0.0232	X
German vs. all others	patdrugf	Both	Others	0.0226	X
German vs. all others	patdrugm	Both	Others	0.0685	
German vs. all others	writingi	Glass	Others	0.0552	
German vs. all others	writingm	Glass	Others	0.0855	
German vs. all others	writingi	Both	Others	0.0402	X
German vs. all others	writingm	Both	Others	0.0603	
Irish vs. all others	alcoholi	Glass	Irish	0.0906	
Irish vs. all others	alcoholm	Glass	Irish	0.0920	
Irish vs. all others	liqalci	Glass	Irish	0.0960	
Irish vs. all others	foodi	Glass	Others	0.0312	X
Irish vs. all others	foodf	Glass	Others	0.0207	X
Irish vs. all others	foodi	Both	Others	0.0469	X
Irish vs. all others	foodf	Both	Others	0.0366	X
Irish vs. all others	fstori	Both	Others	0.0602	
Irish vs. all others	fstorf	Both	Others	0.0671	
Irish vs. all others	fstorm	Both	Others	0.0827	
Irish vs. all others	wholef	Ceram	Irish	0.0978	

Significant Differences: ***(continued)***

Ethnicity	Variable	Material	Which has more?	Prob.	Sig @ 5%
U.S. white vs. all others	liquori	Glass	Others	0.0817	
U.S. white vs. all others	liquorf	Glass	Others	0.0861	
U.S. white vs. all others	liquorm	Glass	Others	0.0987	
U.S. white vs. all others	liquori	Both	Others	0.0756	
U.S. white vs. all others	liquorf	Both	Others	0.0827	
U.S. white vs. all others	liquorm	Both	Others	0.0987	
U.S. white vs. all others	liqalci	Glass	Others	0.0681	
U.S. white vs. all others	liqalcf	Glass	Others	0.0708	
U.S. white vs. all others	liqalcm	Glass	Others	0.0740	
U.S. white vs. all others	liqalci	Both	Others	0.0740	
U.S. white vs. all others	liqalcf	Both	Others	0.0739	
U.S. white vs. all others	liqalcm	Both	Others	0.0870	
U.S. white vs. all others	drugf	Glass	Others	0.0582	
U.S. white vs. all others	drugi	Both	Others	0.0917	
U.S. white vs. all others	drugf	Both	Others	0.0582	
U.S. white vs. all others	patdrugi	Glass	U.S. white	0.0363	X
U.S. white vs. all others	patdrugf	Glass	U.S. white	0.0543	
U.S. white vs. all others	patdrugm	Glass	U.S. white	0.0361	X
U.S. white vs. all others	patdrugi	Both	U.S. white	0.0363	X
U.S. white vs. all others	patdrugf	Both	U.S. white	0.0543	
U.S. white vs. all others	patdrugm	Both	U.S. white	0.0361	X
U.S. white vs. all others	tobaci	Glass	Others	0.0599	
U.S. white vs. all others	tobacm	Glass	Others	0.0599	
U.S. white vs. all others	tobaci	Both	Others	0.0599	
U.S. white vs. all others	tobacm	Both	Others	0.0599	
U.S. white vs. all others	fstori	Both	U.S. white	0.0602	
U.S. white vs. all others	fstorf	Both	U.S. white	0.0602	
U.S. white vs. all others	fstorm	Both	U.S. white	0.0707	
U.S. white vs. all others	wholei	Ceram	Others	0.0579	
U.S. white vs. all others	wholef	Ceram	Others	0.0190	X

Interpretations:

As with lumping occupation categories in both cities, lumping ethnicities should improve the resolution of patterns by ethnicity in the pre-1890 San Francisco Bay area. The ethnicity categories are much less evenly divided between the two cities, however, so the patterns presented here are likely to be confounded by city-level patterns and must be examined carefully.

Ethnicity	SF Households	Oakland Households	Total Households	% SF
German	4	5	9	44%
Irish	6	13	19	32%
U.S. white	3	16	19	16%

German households differed from other households of known ethnicity in their medicine purchases. The percentage data suggest that they consumed relatively more medicines in embossed bottles from druggists or apothecaries than did other households, although the pattern is significant only for the sensitive "percent of fragments" measure with only 10% confidence. The same general pattern is repeated more strongly from the standpoint of the mix of medicines purchased, with German households buying relatively more of their medicines from druggists or apothecaries, as opposed to patent medicines. This pattern is significant on all three relevant measures, two with 5% confidence, for both glass containers and all containers combined; since almost all medicines came in glass, however, these measures are virtually the same. Germans also purchased relatively fewer writing materials, mostly ink, than did members of the other ethnic categories according to several measures. Since none of these patterns corresponds to differences between San Francisco and Oakland overall, they are probably not due to the unbalanced samples and can probably be treated as real differences between Germans and others.

Since the sample of Irish households is comprised of a mix of San Francisco and Oakland households that is intermediate between that of the samples of the other two major ethnicities, it is the least likely to be affected by city-level differences. The results for Irish households can probably be taken as being relatively good indicators of ethnic differences.

According to the percentage data, Irish households in general seem to have consumed the most alcoholic beverages overall, and the most liquor specifically. These two patterns are weakly supported by only three significant comparisons, all with only 10% confidence. These same Irish households purchased relatively less food packaged in glass or in glass and ceramic containers combined, as suggested by both the percentage data and four significant differences, three with 5% confidence. The significance tests also suggest that Irish households used fewer glass and ceramic food-storage containers, but the percentage data suggest the opposite. This contradiction hints at a very erratic

distribution of food-storage containers, perhaps with some households having large quantities and others very few. Further analysis might clarify this issue, but for the moment, it would be prudent not to put much credence in this apparent neglect of food-storage containers by Irish households.

At first glance, it appears that U.S.-born whites differed strongly from other ethnic groups, consuming less liquor, fewer drugs in embossed bottles from druggists and apothecaries, a higher proportion of patent medicines in their mix of medicines, and more foods locally stored in glass and ceramic containers, and that they discarded fewer whole ceramic containers. Of the U.S.-born white households in the sample, however, 84% are from Oakland, and these patterns are all characteristic of Oakland as a whole in contrast to San Francisco. While it is possible that U.S.-born whites as an ethnic category really did differ from others in these ways, the confounding effect of this very unbalanced sample makes it unwise to put any credence in these patterns without additional statistical investigation, for which there is no space here. The one distinction of U.S.-born white households that does not correspond to its mostly Oakland origin is the relatively low use of tobacco containers—both relative to glass containers and to all containers combined—albeit with only 10% confidence on two measures each. As noted earlier, only 25 tobacco containers are included in the entire sample for both cities, so just a few snuff users could account for this pattern.

PRIVIES VS. WELLS IN SAN FRANCISCO AND OAKLAND COMBINED

Feature Type	n	wholei glass	wholef glass	wholem glass	n	groomi ceram	groomf ceram	groomm ceram
Privy	59	7	8	26	53	1	0	2
Well	4	7	8	30	3	7	7	4
Total	63	7	8	26	56	1	1	2

Feature Type	n	fstori glass	fstorf glass	fstorm glass	n	fstori both	fstorf both	fstorm both
Privy	59	8	8	4	59	10	11	5
Well	4	0	0	0	4	2	2	2
Total	63	7	8	3	63	10	10	5

Privies vs. Wells in San Francisco and Oakland Combined *(continued)*

Feature Type	n	tobaci glass	tobacf glass	tobacm glass	n	tobaci both	tobacf both	tobacm both
Privy	59	0.1	0.1	0.3	59	0.1	0.1	0.3
Well	4	0.6	0.0	2.6	4	0.6	0.0	2.4
Total	63	0.1	0.1	0.4	63	0.1	0.0	0.4

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for the assemblage-size differences. Numbers of features vary because some features have no ceramic containers. Variables ending in I are "percent of all items, whole or broken." Variables ending in F are "percent of fragments only" (except WholeF, which is whole bottles divided by fragments). Variables ending in M are "percent of MNI."

Comparisons:

Privy vs. Well

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Feature Type	Variable	Material	Which has more?	Prob.	Sig @ 5%
Privy vs. Well	fstori	Glass	Privy	0.0280	X
Privy vs. Well	fstorf	Glass	Privy	0.0280	X
Privy vs. Well	fstorm	Glass	Privy	0.0280	X
Privy vs. Well	tobaci	Glass	Well	0.0206	X
Privy vs. Well	tobacm	Glass	Well	0.0159	X
Privy vs. Well	tobaci	Both	Well	0.0206	X
Privy vs. Well	tobacm	Both	Well	0.0159	X
Privy vs. Well	groomf	Ceram	Well	0.0640	

Interpretations:

The purpose of comparing privies and wells is mostly to determine if the deposition processes that created the assemblages found in them were sufficiently different to warrant concern about lumping the two kinds of features for analysis. In fact, the differences seem minor, so including both privies and wells in the same analysis should introduce no serious distortions.

There was no significant difference in recycling (whole bottles) between privies and wells in the two cities, and the percentages of whole bottles are reassuringly similar. Wells do differ from privies in having very few examples of food-storage containers, especially glass ones. This pattern is clear in the percentage data, and is significant on all three measures for glass containers with 5% confidence. Since there are only four wells

in the lumped sample, this could be a coincidence. Alternatively, food-storage vessels might have been disposed of in some distinct way that reduced their likelihood of being dumped into wells.

The other two significant patterns are in the 25 tobacco (snuff) containers and the 12 ceramic containers of grooming products, both of which were disproportionately discarded in wells. While these patterns could reflect different snuffing and grooming behaviors near privies and wells, which is certainly possible, they are based on such small numbers of disposal events that both patterns would have been caused by just a few actions by each of a few individuals. In the absence of a convincing explanation, these differences can probably be regarded as minute historical particulars, rather than indications of general behavioral regularities. They should not arouse any concerns about treating privies and wells as comparable depositional contexts for analysis.

STATISTICAL ANALYSIS OF CERAMIC TABLEWARE AND SERVINGWARE WITH COMPARISONS TO PRE-1890 OAKLAND

Bruce Owen

SUMMARY OF FINDINGS

The ceramic tableware and servingware that San Francisco households used was strongly conditioned by the occupation of the head of the household, which is presumably an indicator of the socioeconomic status of the household. Higher-status households did not differ from others in the overall amount of ceramic servingware or tableware that they, as estimated by comparison to consumption of glass containers. Nor did they differ significantly in the balance of servingware and tableware that they discarded, as might have been expected if their serving and eating practices had differed markedly from lower-status households. The percentage data hint that the three wealthy professional households may have used fewer servingware per tableware setting, perhaps reflecting a tendency to serve food to larger groups, but the pattern is not significant.

Instead of differing in quantity or function, the dramatic differences are entirely in the selection of ceramic materials for both servingware and tableware. Although the three wealthy professional households frequently deviate from the general pattern, the broad trends are clear and significant. Wealthy professional households used more Asian porcelain than did professional, skilled, and all other households lumped together. Since there are only 9 examples of Asian porcelain in the San Francisco sample, this difference reflects a small number of individual purchases. On the other hand, this pattern also holds when the samples are expanded to include households from Oakland, with 18 additional pieces. The association of Asian porcelain with wealthy professionals is probably real, even if it only figured in a limited number of transactions.

Wealthy professionals also used more non-Asian porcelain than did professional or skilled households, or than professional and skilled households combined, while skilled households used more non-Asian porcelain tableware than did unskilled households. Oddly enough, when the analyses are limited to just servingware, unskilled households also appear to have used more porcelain than did skilled households, or skilled and professional households combined. The percentage data also suggest an unexpectedly high representation of porcelain in the assemblages of servingware of unskilled households. This counterintuitive similarity of unskilled households and wealthy professional households echoes similar patterns found in the Cypress analyses. Wealthy professionals may have sold or given away unwanted servingware to unskilled

households. Alternatively, unskilled households may have more aggressively emulated their wealthiest neighbors than did households of higher professional status.

Conversely, "opaque porcelain" or "white improved earthenware" (OP/WIE) tableware was comparably, if less dramatically, associated with lower professional status. Wealthy professional households included a smaller proportion of OP/WIE in their tableware and servingware assemblages than did skilled households, professional and skilled households combined, and all non-wealthy households combined. Skilled households used a smaller proportion of OP/WIE than did unskilled households. These patterns are significant only for tableware, which made up over 80% of all the OP/WIE from San Francisco.

Earthenware servingware were associated with lower professional status. Skilled and unskilled households together used more earthenware than did wealthy professional households. Skilled households had more earthenware servingware than did professional households, both relative to all ceramic tableware and servingware, and relative to glass containers. The same pattern holds when a smattering of other inexpensive wares, such as yellowware and CC ware, are lumped with earthenware in a "basic" ware category.

Finally, all four of the rare "miscellaneous" ware items—including Parian porcelain, Chinese stoneware, and pearlware—were found in the wealthy professional households. This sample is very small, but the trend is strong and seems to make economic sense.

The significant patterns and the trends in the percentage data can be generalized into a gross ranking of ceramic materials by status, as in the following table:

Occupation Category	Asian Porcelain	Non-Asian Porcelain	OP/WIE	Earthenware	"Basic" Wares
Wealthy Professional	High	High	Low	Low	Low
Professional	Low	Low	Medium	Low	Low
Skilled	Low	Low	Medium	High	High
Unskilled	Low	Low	High	High	High

These same ranking patterns are corroborated by analyses that lump like occupations from both San Francisco and Oakland. The lumped analysis did not contradict the San Francisco sample on any point, but it also did not provide any additional details.

Patterning by ethnicity is difficult to separate from patterning by occupation (and vice versa), because the two English households in the San Francisco sample happen to be two of the three wealthy professional households, while the Irish households in the San Francisco sample are all skilled, unskilled, or headed by a widow. These two groups account for most of the patterns by ethnicity. This correlation of professional and ethnic groupings means that the presumably economic patterns discussed above could

theoretically be due to ethnicity instead. However, the fact that the several ware categories fall into compatible ranking scale, and that this scale fits logically with many of the other analyses described below, suggests that economic-status differences are more likely than ethnic differences to be the principal causal factors.

The small number of Asian porcelain items were significantly concentrated in the two English households. Non-Asian porcelain was also significantly concentrated in English households, albeit less strongly. The three U.S.-born white households had a few pieces of non-Asian porcelain tableware, but no porcelain servingware at all, in significant contrast to the rest of the sample. The four examples of miscellaneous wares were concentrated in English and German households, but again, these represent a very small number of purchases. It is not clear whether the English households reflected an ethnic preference for exotic ceramics, or enjoyed an economic status that gave them access to expensive items in general.

The two English households used a smaller proportion of OP/WIE ceramics than did the Irish households or all other households combined. U.S.-born whites used more OP/WIE ceramics than the Irish households or than all other households combined. On the other hand, those same U.S.-born white households used fewer earthenware serving vessels than did Irish households or all other households together. Irish households used more of these inexpensive, apparently lower-status earthenware servingware than did all other households combined. The same patterns persist when other inexpensive wares are lumped in with earthenwares. These differences might suggest that OP/WIE was of somewhat higher status than earthenware. Alternatively, they may reflect ethnic differences in which U.S.-born whites had a greater preference for OP/WIE servingware, while Irish households had a greater preference for earthenware servingware, and perhaps earthenware tableware as well.

Lumping households of like ethnicity from both San Francisco and Oakland produced comparable patterns, again seeming to reflect principally the dominant occupation categories of each group. Comprised almost entirely of unskilled and skilled households, the lumped Irish sample followed the lower-status pattern of high proportions of servingware, earthenwares, and "basic" wares, with low proportions of Asian and non-Asian porcelain. As in San Francisco, U.S.-born white households in the lumped sample seem to fall above the bottom of the ceramic status scale, in this case with a lower proportion of earthenwares and "basic" wares than households of other ethnicities.

The patterning by homeownership, as opposed to renting, is largely in the quantity of tableware and servingware discarded, rather than the mix of ware materials. Homeowners discarded more ceramic tableware and servingware items per glass container than did tenants, and more earthenware servingware specifically. The most straightforward explanation is that owners simply used and discarded more ceramic tableware and servingware per person than did renters. Another possibility is that owners discarded fewer glass containers per person. Homeowners also discarded a mix of servingware with a higher proportion of "basic," inexpensive ceramic materials than

did renters. This suggests that owners may have opted for less-expensive servingware, even as they spent more on quantity. The percentage data, however, also suggest that owners used proportionally more of the expensive Asian and non-Asian porcelains, with correspondingly fewer of the lower-cost OP/WIE wares. While these differences are not significant, they make it difficult to generalize about the mix of wares used by homeowners.

Households that fronted on interior streets discarded more pieces of servingware, and more pieces of servingware and tableware combined, per glass container than did households on numbered streets. The percentage data suggest that households facing interior streets discarded both a larger amount of servingware and tableware, and a mix richer in servingware than did other households. Most of the other differences by street frontage parallel the presumably economic ones noted in the occupation analysis. Houses fronting on main streets had more Asian porcelain in their refuse, both proportionally and relative to glass containers, than did households facing either numbered or interior streets. However, since all three of the wealthy professional households are among the four households on main streets, the role of street frontage and professional status cannot be separated. Similarly, houses facing main streets had more non-Asian porcelain than did either interior or numbered streets, although this pattern is not as overwhelming as the one for Asian porcelain.

Households on numbered streets also rivaled those on main streets in having even fewer of the moderate-status OP/WIE servingware. Households on interior streets had a higher proportion of OP/WIE tableware than did those on main streets, and more OP/WIE servingware relative to glass containers than did households on numbered streets. In all, these ceramics suggest not only that the households facing main streets discarded the highest-status assemblage of tableware and servingware, but also that households on numbered streets had assemblages of intermediate status, and that households on interior streets had the lowest-status assemblages.

In contrast to the pervasive city-level patterning in meat-species preferences and many aspects of the glass- and ceramic-container assemblages, the only significant difference in ceramic tableware and servingware between San Francisco and Oakland was the comparatively trivial fact that all four examples of rare miscellaneous wares came from San Francisco. The percentage data for the two cities are very similar for almost every other variable. Any differences in the ceramic tableware and servingware assemblages must have been much less pronounced than those in meat species, alcoholic beverages, food packaged in glass and ceramic containers, and so on. This contrast might indicate that these ceramic wares were acquired through structurally different channels that were not subject to city-level processes, such as placing orders by mail or ordering through local dealers who had access to the same or similar manufacturers or distributors. It might also imply that tastes in ceramic tableware and servingware were more uniform across the region than were food and beverage preferences, perhaps informed more by regional or larger-scale advertising or other publications.

Comparisons of households of each occupation category, ethnic category, and tenure category (homeowners vs. renters) in San Francisco with their counterparts in Oakland all produced a scattering of inconsistent differences that proved difficult to interpret. The only clear conclusion is that just as in the whole-city comparisons, no general city-level trends were found in the ceramic servingware and tableware, in contrast to the strong, cross-cutting city-level patterning observed in meat-species preferences, alcoholic-beverage consumption, and other aspects of glass- and ceramic-container consumption.

Ceramic tableware and servingware were strongly patterned by the neighborhood in which a household was located. Most of this patterning corresponds roughly to the economic or status scale of wares noted in the occupation analysis. Households in the apparently prosperous Rincon Hill neighborhood discarded less ceramic tableware and servingware relative to their glass container consumption than did households in the Mission Bay, West of Market, or Oakland Point neighborhoods. These high-status Rincon Hill households may have broken their ceramic tableware and servingware at a lower rate, perhaps because they owned more valuable pieces that would be handled with more care, or they may have tended to give them away or sell them rather than discarding them with the trash.

Households in Mission Bay discarded more servingware than did those in either Rincon Hill or Oakland Point. The percentage data suggest a similar trend in tableware, although they are not significant.

Within Oakland, the Oakland Point neighborhood stands out as different in a variety of ways. Oakland Point appeared to be an outlier among Oakland neighborhoods in the glass- and ceramic-container analysis, too, falling by a considerable margin at the low-status end of the scale. Households in Oakland Point discarded an unusually large quantity of servingware compared to either East of Market or West of Market. This parallel with Mission Bay suggests that high proportions and amounts of servingware may be linked to low status, although why that should be so is not obvious.

Households in prosperous Rincon Hill discarded more Asian porcelain than did households in any other neighborhood. At the other end of the scale, refuse from the Oakland Point neighborhood had less non-Asian porcelain than did refuse from any other neighborhood. Again, Oakland Point was clearly a lower-status outlier.

Similarly, households in the Mission Bay neighborhood discarded less non-Asian porcelain than did those either East or West of Market, and the percentage data suggest the same with regard to Rincon Hill. Only Oakland Point households discarded less non-Asian porcelain than did households in Mission Bay. While the proportions and amounts of non-Asian porcelain did not differ significantly among the other three neighborhoods, they clearly differentiate Oakland Point as having the least, followed by Mission Bay.

The impression that OP/WIE wares were associated with lower-status households is supported by the Mission Bay and Oakland Point neighborhoods, which have particularly high proportions and large amounts of OP/WIE. Their order is reversed, however, with households in Mission Bay having more OP/WIE than any other neighborhood by various measures. Households in Oakland Point discarded more OP/WIE than did those in all other neighborhoods except Mission Bay. Just as the scarcity of non-Asian porcelain distinguished these two neighborhoods as being of lower status than the others, so does the greater presence of OP/WIE.

One surprising pattern is that households in Rincon Hill discarded more OP/WIE servingware than did households either East or West of Market. This might hint that OP/WIE was more acceptable to high-status consumers as servingware than as tableware.

Not surprisingly, households in Rincon Hill had lower proportions and absolute amounts of earthenware and "basic" ware servingware than did households in all other neighborhoods. There were no significant differences or clear patterns in the percentage data that could rank the other four neighborhoods by earthenware use.

In the analysis of meat-cut data, I suggested a general ranking of neighborhoods based on the mix of meat-cut costs. Most of the ceramic and glass container data did not fit this ranking well, apparently swamped by overwhelming city-level effects, although they did agree that the Oakland Point neighborhood was extreme among the Oakland neighborhoods. However, the ceramic tableware and servingware data do corroborate the ranking based on meat-cut prices quite well, as shown in the table below. The table is ordered according to the meat-cut analysis, with the highest-status neighborhood at the top.

Neighborhood	Asian Porcelain	Non-Asian Porcelain	OP/WIE	Earthenware	"Basic" Wares
Rincon Hill, SF	High	High	Low	Low	Low
East of Mkt, Oak	Low	High	Low	High	High
West of Mkt, Oak	Low	High	Low	High	High
Oakland Pt, Oak	Low	Lowest	High	High	High
Mission Bay, SF	Low	Low	Highest	High	High

This almost-perfect match both confirms the general socioeconomic ranking of the neighborhoods based on the cost of meat consumed, and reinforces the impression that the purchase, use, and discard of ceramic tableware and servingware were not affected by the city-level processes that had such a large impact on meat-species preferences and the distributions of many kinds of ceramic and glass containers.

There was no significant difference in the ceramic tableware and servingware assemblages from privies and wells in San Francisco. In an expanded sample that lumps

all the wells and privies from both cities, the only significant differences reflected a tendency of the four wells to accumulate less non-Asian porcelain than did privies. Without any other trends to parallel it, this difference is not very convincing. Overall, it appears that the processes that produced the assemblages in the two kinds of features probably did not differ drastically, and that mixing the two kinds of features in analysis probably introduces no serious distortions.

This analysis is not exhaustive. Additional analyses, including analyses of correlations in the context data and multivariate statistical approaches, could provide further useful insights.

INTRODUCTION

This report describes results of a search for statistically significant patterning in the distribution of general categories of ceramic tableware and servingware among features divided according to potentially meaningful cultural categories. The ceramic categories analyzed are summarized in the table below.

Category	**Variable Name**	**Includes/Rationale (all measured in MNI)**
MNI	MNI	All ceramic tableware and servingware
Servingware	serving	Ceramic objects used for serving.
Tableware	table	Ceramic objects used as individual place settings.
Asian porcelain	asiapor	Porcelain from China, Japan, or Asia in general.
Porcelain	porc	Porcelain and "Porcelain?" not identifiable as being from Asia.
OP/WIE	op	Opaque porcelain and/or White Improved Earthenware
Earthenware	earth	Identified specifically as earthenware.
Inexpensive wares	basic	Mostly Earthenware, plus small numbers of Red-bodied Earthenware, CC ware, Stoneware, and Yellowware.
Miscellaneous	misc	Four examples of rare wares, including Parian porcelain, Chinese stoneware, and Pearlware.

The cultural categories are the same as those used in the other statistical analyses. They are summarized in the "Statistical analysis methods" section.

The context data used here were provided by Mary Praetzellis in April 2004. The ceramic tableware and servingware data were provided by Erica Gibson in April 2004. The comparative data from Oakland are from the Cypress Project. For this analysis, these data are limited to contexts dating to before 1890.

APPROACH AND METHODS

This analysis follows the general methodology described in the "Statistical Analysis Methods" section. All of the variables are expressed in terms of MNI. The section below describes some adjustments to that general methodology to accommodate the tableware and servingware data. The two principal differences have to do with the need to analyze tableware and servingware both separately and together, and the need to standardize the variables so that it is clear what universe the percentage values represent. Since tableware and servingware tended to be made of different materials, it makes sense to analyze the mix of materials used for tableware separately from the mix of materials used for servingware. For this reason, all the analyses are performed on three different datasets, one of only servingware, one of only tableware, and one with both.

All of the variables are expressed (standardized) in two ways. First, each material is given as a percentage of all items in the dataset, that is, as a percentage of servingware items, of tableware items, or of all items combined. These percentages reflect the composition or mix of ceramics used. That is, they describe the nature of tableware and servingware use, but not the intensity or quantity of it.

In addition, all of the material types, as well as the two functional categories and the total MNI of all ceramic tableware and servingware together, are also analyzed as MNI of the ceramic items divided by the total MNI of glass containers from the same feature. The idea here is to use MNI of glass containers as an independent measure of the amount of consumer debris in general in the feature. A high ratio of ceramic items to glass containers would indicate a greater use of ceramic items relative to overall consumption of the beverages, medicines, foods, and so on that came in glass containers. Assuming that individuals discarded roughly similar amounts of glass container refuse per year, a higher ratio of ceramic items to glass containers would presumably be due to either the use of more pieces per person in the household, more rapid discard and replacement of ceramic items, or both. In any case, a high ratio of ceramic items to glass containers would suggest more spending on ceramic items per consumer. That is, the "percent of tableware," "percent of servingware," and "percent of all tableware and servingware" variables describe the composition of the mix of tableware and servingware used. The ratios of various ceramic items to MNI of glass containers tend to describe the absolute amounts of each type of ceramic item consumed per consumer represented.

Ceramics that served other functions, such as cooking wares and containers, are not included in this analysis. Since there are only two general functional categories, the relative amounts of each are analyzed here using the percentage of tableware and servingware that are servingware. The percentage that represents tableware is simply 100% minus this percentage.

My approach is to analyze all the measures, and to seek reinforcing or contrasting patterns in different measures that have related meanings. Individual significant results

are interesting, but patterns that are supported by multiple kinds of measures are more likely to be strong and meaningful.

The statistics were run on SAS software, using SAS instructions in the programs CSTABWA2.SAS, ceramic tableware and servingware data from CSTABW1.DBF, glass container data from CSCONT1.DBF, and context data from CSCTX4.DBF. The programs are text files that can be viewed using any word processor, and the data files can be viewed directly by Excel or most database programs.

The table below provides a complete list of ceramic variables analyzed. Except for pctserv, servingg, and tableg, all the variables are analyzed three times: once as percentages of tableware, again as percentages of servingware, and finally as percentages of both tableware and servingware combined. The three other variables are analyzed only for the combined dataset, since they are either zero or redundant in the tableware-only and servingware-only analyses. Mnig is calculated for the tableware-only and servingware-only datasets. Mnig in these subset analyses is almost the same as tableg or servingg in the full analysis, but differs slightly in cases where features were dropped from the subset analysis because they contained no servingware or tableware.

Variable Name	Meaning
mnig	MNI of all ceramic servingware and tableware / MNI of glass containers
pctserv	MNI of servingware / (MNI of servingware + MNI of tableware)
servingg	MNI of servingware / MNI of glass containers
tableg	MNI of tableware / MNI of glass containers
asiat	MNI of Asian porcelain / MNI of tableware, servingware, or both
asiaporg	MNI of Asian porcelain / MNI of glass containers
porct	MNI of non-Asian porcelain / MNI of tableware, servingware, or both
porcg	MNI of non-Asian porcelain / MNI of glass containers
opt	MNI of "OP/WIE" / MNI of tableware, servingware, or both
opg	MNI of "OP/WIE" / MNI of glass containers
eartht	MNI of earthenware / MNI of tableware, servingware, or both
earthg	MNI of earthenware / MNI of glass containers
basict	MNI of earthenware + other inexpensive wares / MNI of tableware, servingware, or both
basicg	MNI of earthenware + other inexpensive wares / MNI of glass containers
misct	MNI of rare wares / MNI of tableware, servingware, or both
miscg	MNI of rare wares / MNI of glass containers

Number of items in each artifact category in the entire sample of features:

Artifact Category (not divided by totals):	San Francisco			Oakland		
	Serving	Table	Both	Serving	Table	Both
mni	234	681	915	287	1,108	1,395
asiapor	3	6	9	3	15	18
porc	28	164	192	41	248	289
op	170	505	675	183	838	1,021
earth	26	2	28	53	3	56
basic	31	4	35	58	7	65
misc	2	2	4	0	0	0

As noted in the methodology section, significant patterns based on small numbers of items should be assessed with caution, since a few idiosyncratic individuals or actions— rather than any broad tendencies of the household categories being compared—might account for the pattern. Comparisons of subsets of features (for example, professional vs. skilled households) will involve even smaller numbers of items, since in most cases not all of the items will be in the features that are included in the analysis. For example, patterns in the distribution of tableware made of earthenware or "basic" wares (MNI = 2 and 4 in the entire San Francisco sample, respectively) should be interpreted with caution. Sample sizes in comparisons involving many households in San Francisco are probably sufficient to minimize this interpretive problem except among Asian porcelains, tableware of earthenware and "basic" wares, and the rare miscellaneous wares. Sample sizes in comparisons involving many households in Oakland are probably sufficient except among Asian porcelains and tableware of earthenware or "basic" wares; there are no "miscellaneous" wares in Oakland. Comparisons that involve only a small number of households in San Francisco may reduce the item count of serving wares of non-Asian porcelain, earthenware, and basic wares to levels where the patterns should become suspect.

RESULTS

OCCUPATION (SF-80 AND WBA ONLY)

Both Types: Occupation	**n**	**mnig**	**pctserv**	**servingg**	**tableg**	**asiaport**	**asiaporg**	**porct**	**porcg**
Wealthy Prof.	3	73	18	12	62	4.1	3.0	42.0	28.9
Professional	3	39	25	10	29	0.0	0.0	20.0	2.1
Skilled	9	79	26	19	60	1.0	0.4	18.1	9.4
Unskilled	2	78	22	18	60	0.0	0.0	8.0	6.0
Total:	17	71	24	16	55	1.2	0.8	21.4	11.2
Both Uses: Occupation	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Wealthy Prof.	3	51	39	1.6	1.3	2.3	1.7	0.9	0.4
Professional	3	80	37	0.0	0.0	0.0	0.0	0.0	0.0
Skilled	9	77	65	2.7	2.3	3.1	2.5	0.6	1.9
Unskilled	2	89	69	3.3	3.1	3.3	3.1	0.0	0.0
Total:	17	74	56	2.1	1.8	2.4	2.0	0.5	1.0

Servingware Only: Occupation	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
Wealthy Prof.	2	17	2.3	0.3	16.9	2.7
Professional	3	10	0.0	0.0	33.3	0.2
Skilled	9	19	1.7	0.3	6.2	0.8
Unskilled	2	18	0.0	0.0	25.0	3.8
Total:	16	17	1.2	0.2	15.0	1.3

Servingware Only: Occupation	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Wealthy Prof.	2	64	12	7.8	1.5	12.0	2.2	4.5	0.6
Professional	3	67	10	0.0	0.0	0.0	0.0	0.0	0.0
Skilled	9	82	15	9.2	2.2	9.9	2.3	0.0	0.0
Unskilled	2	64	11	11.1	3.1	11.1	3.1	0.0	0.0
Total:	16	75	13	7.5	1.8	8.4	2.0	0.6	0.1

Occupation *(continued)*

Tableware Only: Occupation	n	mnig	asiaport	asiaporg	porct	porcg
Wealthy Prof.	3	62	4.0	2.8	47.0	27.2
Professional	3	29	0.0	0.0	19.0	1.8
Skilled	9	60	0.5	0.2	22.0	8.7
Unskilled	2	60	0.0	0.0	3.9	2.2
Total:	17	55	0.9	0.6	23.8	10.0

Tableware Only: Occupation	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
Wealthy Prof.	3	49	32	0.4	0.3	0.4	0.3	0.0	0.0
Professional	3	81	27	0.0	0.0	0.0	0.0	0.0	0.0
Skilled	9	76	50	0.3	0.1	0.4	0.2	0.8	1.9
Unskilled	2	96	57	0.0	0.0	0.0	0.0	0.0	0.0
Total:	17	75	43	0.2	0.1	0.3	0.1	0.4	1.0

Except for the number of features (n), All figures are percentages, and all totals are weighted averages to account for assemblage-size differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)." Variables ending in G are "MNI of the ceramic item per MNI of glass containers." All variables are based on MNI of items.

Comparisons:

All pairs of occupation categories

Wealthy (P+) vs. all others (P,S,U)

Wealthy (P+) vs. Middle (P,S)

Middle (P,S) vs. Unskilled (U)

Middle (P,S) vs. Extremes (U,P+)

Upper (P+,P) vs. Lower (S, U)

Any skill (P+,P,S) vs. Unskilled (U)

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Occupation Comparisons:	Variable	Use	Which has more?	Prob.	Sig @ 5%
Wealthy Professional vs. Prof.	asiaport	both	Wealthy Prof.	0.0636	
Wealthy Professional vs. Prof.	asiaporg	both	Wealthy Prof.	0.0636	
Wealthy Professional vs. Skilled	asiaport	both	Wealthy Prof.	0.0844	
Wealthy Professional vs. Skilled	asiaporg	both	Wealthy Prof.	0.0349	X
Wealthy Professional vs. others	asiaport	both	Wealthy Prof.	0.0199	X
Wealthy Professional vs. others	asiaporg	both	Wealthy Prof.	0.0091	X
Wealthy Prof. vs. Prof & Skilled	asiaport	both	Wealthy Prof.	0.0346	X
Wealthy Prof. vs. Prof & Skilled	asiaporg	both	Wealthy Prof.	0.0152	X
Wealthy Professional vs. Prof.	porcg	both	Wealthy Prof.	0.0765	
Wealthy Professional vs. Skilled	porct	both	Wealthy Prof.	0.0645	
Wealthy Professional vs. Skilled	porcg	both	Wealthy Prof.	0.0162	X
Professional vs. Skilled	porcg	both	Skilled	0.0262	X
Wealthy Professional vs. others	porct	both	Wealthy Prof.	0.0676	
Wealthy Professional vs. others	porcg	both	Wealthy Prof.	0.0098	X
Wealthy Prof. vs. Prof & Skilled	porct	both	Wealthy Prof.	0.0966	
Wealthy Prof. vs. Prof & Skilled	porcg	both	Wealthy Prof.	0.0115	X
Wealthy Professional vs. Skilled	opt	both	Skilled	0.0645	
Skilled vs. Unskilled	opt	both	Unskilled	0.0588	
Wealthy Professional vs. others	opt	both	All non-wealthy	0.0506	
Wealthy Prof. vs. Prof & Skilled	opt	both	Prof & Skilled	0.0709	
Professional vs. Skilled	eartht	both	Skilled	0.0552	
Professional vs. Skilled	earthg	both	Skilled	0.0552	
Wealthy prof & prof vs. others	eartht	both	Skilled & Unsk.	0.0684	
Professional vs. Skilled	basict	both	Skilled	0.0552	
Professional vs. Skilled	basicg	both	Skilled	0.0552	
Wealthy Professional vs. Skilled	porcg	serve	Wealthy Prof.	0.0948	
Skilled vs. Unskilled	porct	serve	Unskilled	0.0948	
Skilled vs. Unskilled	porcg	serve	Unskilled	0.0539	

Significant Differences: ***(continued)***

Occupation Comparisons:	Variable	Use	Which has more?	Prob.	Sig @ 5%
Wealthy Prof. vs. Prof & Skilled	porcg	serve	Wealthy Prof.	0.0548	
Prof & Skilled vs. Unskilled	porcg	serve	Unskilled	0.0338	X
Wea. Prof & Unskilled vs. Middle	porct	serve	Wea Prof & Uns	0.0604	
Wea. Prof & Unskilled vs. Middle	porcg	serve	Wea Prof & Uns	0.0079	X
Professional vs. Skilled	eartht	serve	Skilled	0.0928	
Professional vs. Skilled	earthg	serve	Skilled	0.0934	
Professional vs. Skilled	basict	serve	Skilled	0.0928	
Professional vs. Skilled	basicg	serve	Skilled	0.0934	
Wealthy Professional vs. Skilled	misct	serve	Wealthy Prof.	0.0593	
Wealthy Professional vs. Skilled	miscg	serve	Wealthy Prof.	0.0593	
Wealthy Professional vs. others	misct	serve	Wealthy Prof.	0.0140	X
Wealthy Professional vs. others	miscg	serve	Wealthy Prof.	0.0140	X
Wealthy Prof. vs. Prof & Skilled	misct	serve	Wealthy Prof.	0.0247	X
Wealthy Prof. vs. Prof & Skilled	miscg	serve	Wealthy Prof.	0.0247	X
Wealthy Professional vs. Prof.	asiaport	table	Wealthy Prof.	0.0636	
Wealthy Professional vs. Prof.	asiaporg	table	Wealthy Prof.	0.0636	
Wealthy Professional vs. Skilled	asiaport	table	Wealthy Prof.	0.0233	X
Wealthy Professional vs. Skilled	asiaporg	table	Wealthy Prof.	0.0233	X
Wealthy Professional vs. others	asiaport	table	Wealthy Prof.	0.0038	X
Wealthy Professional vs. others	asiaporg	table	Wealthy Prof.	0.0038	X
Wealthy Prof. vs. Prof & Skilled	asiaport	table	Wealthy Prof.	0.0077	X
Wealthy Prof. vs. Prof & Skilled	asiaporg	table	Wealthy Prof.	0.0077	X
Wea. Prof & Unskilled vs. Middle	asiaport	table	Wea Prof & Uns	0.0774	
Wea. Prof & Unskilled vs. Middle	asiaporg	table	Wea Prof & Uns	0.0774	
Wealthy Professional vs. Prof.	porcg	table	Wealthy Prof.	0.0765	
Wealthy Professional vs. Skilled	porct	table	Wealthy Prof.	0.0645	
Wealthy Professional vs. Skilled	porcg	table	Wealthy Prof.	0.0265	X
Professional vs. Skilled	porcg	table	Skilled	0.0262	X
Skilled vs. Unskilled	porct	table	Skilled	0.0451	X
Skilled vs. Unskilled	porcg	table	Skilled	0.0451	X
Wealthy Professional vs. others	porct	table	Wealthy Prof.	0.0507	

Significant Differences: ***(continued)***

Occupation Comparisons:	Variable	Use	Which has more?	Prob.	Sig @ 5%
Wealthy Professional vs. others	porcg	table	Wealthy Prof.	0.0140	X
Wealthy Prof. vs. Prof & Skilled	porct	table	Wealthy Prof.	0.0709	
Wealthy Prof. vs. Prof & Skilled	porcg	table	Wealthy Prof.	0.0171	X
Wealthy Professional vs. Skilled	opt	table	Skilled	0.0645	
Skilled vs. Unskilled	opt	table	Unskilled	0.0451	X
Wealthy Professional vs. others	opt	table	All non-wealthy	0.0375	X
Wealthy Prof. vs. Prof & Skilled	opt	table	Prof & Skilled	0.0511	

Interpretations:

A San Francisco household's use and disposal of tableware and servingware was strongly related to the occupation of its members. Interestingly, there is no convincing indication that higher-status households disposed of more ceramic table and servingware overall, at least relative to glass containers. There are several interpretations for this absence of an expected difference. High-status households may not have used markedly greater quantities of servingware and tableware per member. Alternatively, they may have used more, but may have broken or discarded pieces relatively less frequently. Still another possibility is that higher-status households did use and discard more tableware and servingware, but in such a way that a portion did not enter that household's refuse, perhaps because they sold or gave away some unwanted wares. The percentage data suggest that the three professional households in the sample averaged less tableware and servingware refuse relative to glass container refuse than the other households, which were all fairly similar by this measure. Some of these professional households may have been unusual in some respect, but the difference is not significant and there is no intelligible broader pattern. Similarly, there is no suggestion that higher-status households had a different emphasis on servingware (or tableware), which might have been expected if high-status households had had different practices related to serving and eating. In this case, the percentage data suggest that the three wealthy professional households differed from the others in having a lower proportion of servingware, while the others were relatively uniform, which could reflect a tendency of the wealthy professional households to serve food to larger groups at the same time. Once again, the differences are not significant, and there is no corresponding broad trend in the percentage data for the other three occupation categories.

Instead of differing in quantity or function, the dramatic differences are entirely in the selection of ceramic materials or wares for both servingware and tableware. Although the three professional households frequently deviate from the general pattern, the broad trends are clear, about half with 5% confidence, and most both as measured relative to other ceramic servingware and tableware and as measured relative to consumption of glass containers.

Wealthy professional households used more Asian porcelain than did professional, skilled, and all other households lumped together. Since there are only 9 examples of Asian porcelain in the San Francisco sample, this difference reflects a small number of individual purchases. They may well reflect real socioeconomic processes, but they should be taken with some caution, and further subdividing these patterns into servingware and tableware may not be justified, although the results are reported above. Incidentally, the two significant results in which wealthy professional households and unskilled households together seem to have more Asian porcelains than do other households is correct, but not very meaningful, since the unskilled households do not have any Asian porcelains at all. The pattern in the wealthy professional households is simply so strong that adding a few unskilled households with no Asian porcelain is not enough to drown it out.

Wealthy professionals also used more non-Asian porcelain than did professional or skilled households, or than professional and skilled households combined. Continuing the association of porcelain with higher-status, skilled households used more non-Asian porcelain tableware than did unskilled households. These patterns are significant for both tableware and servingware, and are based on almost 200 items, so they probably do reflect general behavioral tendencies. Oddly enough, when the analyses are limited to just servingware, unskilled households also appear to have used more porcelain than did skilled households, or than did skilled and professional households combined. The percentage data also suggest an unexpectedly high representation of porcelain among servingware of unskilled households. Unskilled households and wealthy professional households as a group have more porcelain servingware than do skilled and professional households combined, both relative to all ceramic servingware and tableware, and relative to glass container refuse. This counterintuitive similarity of wealthy professional and unskilled households echoes similar patterns found in the Cypress Project analyses. Interpreting this surprisingly consistent pattern requires historical as well as statistical context, but among other possibilities, one might imagine that unskilled households had relationships with skilled households in such a way that they may have had access to used goods no longer wanted in the wealthy household. Alternatively, the unskilled households may have been more aggressive in emulating their wealthiest neighbors than were households of higher professional status.

While porcelains were generally associated with higher occupational status, "opaque porcelain" or "white improved earthenware" (OP/WIE) tableware was comparably, if less dramatically, associated with lower occupational status. Considering either tableware alone, or tableware and servingware together, wealthy professional households used a smaller proportion of OP/WIE in their tableware and servingware assemblages than did skilled households, professional and skilled households combined, and all non-wealthy households combined. Continuing the trend down the scale of occupational status, skilled households used a smaller proportion of OP/WIE than did unskilled households. These patterns are not significant among servingware, and the percentage data for OP/WIE among servingware does not indicate any clear

pattern. Over 80% of all the OP/WIE from San Francisco was tableware, so the sample of 28 OP/WIE servingware items may just not be large enough to show clear patterning.

Similarly, earthenware servingware were associated with lower occupational status. Skilled and unskilled households together used more earthenware than did wealthy professional households. Skilled households had more earthenware servingware than did professional households, both relative to all ceramic tableware and servingware, and relative to glass containers. The same pattern is true if a smattering of other inexpensive wares, such as yellowware and CC ware, are lumped with earthenware, or if both tableware and servingware are considered.

Finally, all of the four examples of rare "miscellaneous" wares were found in the wealthy professional households, a pattern that is significant in a variety of different comparisons. This sample is very small, but the trend is strong and seems to make economic sense.

The significant patterns and the trends in the percentage data can be simplified and generalized into a gross ranking of ceramic materials by status, as in the following table:

Occupation Category	Asian Porcelain	Non-Asian Porcelain	OP/WIE	Earthenware	"Basic" Wares
Wealthy Professional	High	High	Low	Low	Low
Professional	Low	Medium	Medium	Low	Low
Skilled	Low	Medium	Medium	High	High
Unskilled	?	?	High	High	High

ETHNICITY (SF-80 AND WBA ONLY)

Both Types: Ethnicity	n	mnig	pctserv	servingg	tableg	asiaport	asiaporg	porct	porcg
English	2	61	15	6	55	5.3	3.7	50.9	31.5
German	4	126	18	27	99	0.4	0.4	22.4	11.7
Irish	6	58	27	15	44	0.3	0.1	15.3	6.8
U.S.	3	39	30	11	28	0.6	0.2	14.5	6.6
Total:	15	73	24	16	57	1.1	0.7	21.8	11.3

Ethnicity *(continued)*

Both Uses: Ethnicity	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
English	2	41	24	0.7	0.3	1.4	0.6	1.4	0.6
German	4	74	107	1.5	2.9	1.7	3.1	1.4	4.2
Irish	6	80	49	3.9	2.6	3.9	2.6	0.0	0.0
U.S.	3	84	32	0.6	0.2	0.6	0.2	0.0	0.0
Total:	15	74	58	2.2	1.9	2.4	2.0	0.5	1.2

Servingware Only: Ethnicity	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
English	1	13	4.5	0.6	22.7	2.8
German	4	27	0.0	0.0	27.8	0.8
Irish	6	15	0.8	0.1	14.9	1.8
U.S.	3	11	0.0	0.0	0.0	0.0
Total:	14	17	0.7	0.1	15.9	1.2

Servingware Only: Ethnicity	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
English	1	55	7	4.5	0.6	9.1	1.1	9.1	1.1
German	4	65	24	5.9	2.7	6.8	2.9	0.0	0.0
Irish	6	70	10	14.4	2.6	14.4	2.6	0.0	0.0
U.S.	3	100	11	0.0	0.0	0.0	0.0	0.0	0.0
Total:	14	74	14	8.2	1.9	8.8	2.0	0.6	0.1

Tableware Only: Ethnicity	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
English	2	55	4.9	3.4	56.5	30.1
German	4	99	0.5	0.4	23.0	10.9
Irish	6	44	0.0	0.0	16.6	4.9
U.S.	3	28	0.8	0.2	18.4	6.6
Total:	15	57	0.9	0.6	24.0	10.2

Ethnicity *(continued)*

Tableware Only: Ethnicity	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
English	2	39	21	0.0	0.0	0.0	0.0	0.0	0.0
German	4	74	83	0.3	0.2	0.3	0.2	1.7	4.2
Irish	6	83	39	0.0	0.0	0.0	0.0	0.0	0.0
U.S.	3	80	21	0.8	0.2	0.8	0.2	0.0	0.0
Total:	15	74	45	0.2	0.1	0.2	0.1	0.5	1.1

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)." Variables ending in G are "MNI of the ceramic item per MNI of glass containers." All variables are based on MNI of items.

Comparisons:

All pairs of common ethnicities

Each of the four common ethnicities vs. the other three lumped together

Each of the four common ethnicities vs. all the others lumped together, including mixed ones (not listed in the table above)

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Ethnicity	Variable	Use	Which has more?	Prob.	Sig @ 5%
English vs. Irish	asiaport	both	English	0.0357	X
English vs. Irish	asiaporg	both	English	0.0357	X
English vs. Irish	asiaport	table	English	0.0164	X
English vs. Irish	asiaporg	table	English	0.0164	X
English vs. German	asiaport	both	English	0.0852	
English vs. all other known	asiaport	both	English	0.0205	X
English vs. all other known	asiaporg	both	English	0.0310	X
English vs. all other known	asiaport	table	English	0.0164	X
English vs. all other known	asiaporg	table	English	0.0263	X
English vs. all other known	asiaport	serve	English	0.0914	
English vs. all other known	asiaporg	serve	English	0.0461	X
English vs. Irish	porct	both	English	0.0668	
English vs. Irish	porcg	both	English	0.0668	

Significant Differences: ***(continued)***

Ethnicity	Variable	Use	Which has more?	Prob.	Sig @ 5%
English vs. Irish	porct	table	English	0.0668	
English vs. Irish	porcg	table	English	0.0668	
English vs. all other known	porct	both	English	0.0578	
English vs. all other known	porcg	both	English	0.0415	X
English vs. all other known	porct	table	English	0.0415	X
English vs. all other known	porcg	table	English	0.0578	
U.S. white vs. all other known	porct	serve	Non-U.S. white	0.0838	
U.S. white vs. all other known	porcg	serve	Non-U.S. white	0.0838	
English vs. Irish	misct	serve	English	0.0412	X
English vs. Irish	miscg	serve	English	0.0412	X
English vs. all other known	misct	serve	English	0.0002	X
English vs. all other known	miscg	serve	English	0.0002	X
German vs. all other known	misct	table	German	0.0824	
German vs. all other known	miscg	table	German	0.0824	
English vs. all other known	opt	both	Non-English	0.0414	X
English vs. all other known	opt	table	Non-English	0.0294	X
English vs. Irish	opt	both	Irish	0.0668	
English vs. Irish	opt	table	Irish	0.0668	
Irish vs. U.S. white	opt	serve	U.S. white	0.0256	X
U.S. white vs. all other known	opt	serve	U.S. white	0.0256	X
U.S. white vs. all other known	eartht	serve	Non-U.S. white	0.0582	
U.S. white vs. all other known	earthg	serve	Non-U.S. white	0.0584	
Irish vs. U.S. white	eartht	serve	Irish	0.0591	
Irish vs. U.S. white	earthg	serve	Irish	0.0591	
Irish vs. all other known	eartht	both	Irish	0.0599	
Irish vs. all other known	eartht	table	Irish	0.0599	
Irish vs. all other known	eartht	serve	Irish	0.0599	
Irish vs. U.S. white	basict	serve	Irish	0.0591	
Irish vs. U.S. white	basicg	serve	Irish	0.0591	
U.S. white vs. all other known	basict	serve	Non-U.S. white	0.0582	
U.S. white vs. all other known	basicg	serve	Non-U.S. white	0.0584	

"All others" categories include households of mixed ethnicity.

Interpretations:

The use of ceramic tableware and servingware by San Francisco households was apparently strongly affected by ethnicity. The patterning by ethnicity, however, is difficult to separate from the patterning by occupation (and vice versa), because the two English households in the San Francisco sample happen to be two of the three wealthy professional households, while the Irish households in the San Francisco sample are all skilled, unskilled, or headed by a widow. The effect is that English households reflect the wealthy professional pattern, while Irish households reflect the lower professional status pattern, and these two ethnicities account for most of the ethnic patterning. Alternatively, the wealthy professional pattern might be primarily determined by ethnicity, rather than socioeconomic status, but the economic explanation fits so nicely to the data that it seems more likely to be the principal causal factor.

Again, there are no significant ethnic differences in the overall use of ceramic servingware and tableware in comparison to glass containers, nor in the balance of servingware versus tableware. The percentage data suggest that both of these varied considerably, with Germans averaging a much greater amount of both servingware and tableware relative to glass container consumption than did any other group, but in the absence of any statistical significance, it is difficult to interpret these figures.

Once again, the significant patterning is in the ceramic materials or wares used. The small number of Asian porcelain items were significantly concentrated in the two English households, compared to Irish, German, and all others, both relative to other ceramic servingware and tableware, and relative to glass containers, mostly with 5% confidence. Non-Asian porcelain was also significantly concentrated in English households, compared to both Irish and all other households combined, both as a fraction of all ceramic tableware and relative to glass containers. As in the professions analysis, this pattern is significant only among tableware and all tableware and servingware combined, and only two of the eight relevant significant differences reach 5% confidence, so the non-Asian porcelain is somewhat less extremely concentrated among the two English households. The three U.S.-born white households had a little non-Asian porcelain tableware, but no porcelain servingware at all, in significant contrast to the rest of the sample.

The four examples of miscellaneous wares were concentrated in English and German households, but despite the statistical significance, the real meaning of such a small number of purchases is arguable. It is not clear whether the English households reflect an ethnic preference for exotic ceramics, or an economic status that gave them access to expensive items in general.

Continuing the pattern seen in the occupation analysis, the two English households used a smaller proportion of OP/WIE ceramics than did the Irish households or all other households combined. U.S.-born whites seemed to express even lower-status preferences, using more OP/WIE ceramics than the Irish households or than all other households combined. On the other hand, those same U.S.-born white households used

fewer of the earthenware serving vessels that were associated with the lower-status Occupation categories than did the Irish households or all other households together. Irish households used more of these inexpensive, apparently lower-status earthenware servingware than did all other households combined. The same significant patterns persist when various other inexpensive wares are lumped in with earthenwares. Since these differences do not conform to the single scale suggested by the occupation analysis, they may reflect either a refinement to that scale, or ethnic differences among the relatively lower-status Irish and U.S.-born whites. In the first case, OP/WIE may have had a somewhat higher status than earthenware. Alternatively, these patterns may reflect ethnic differences in which U.S.-born whites had a greater preference for OP/WIE servingware, while Irish households may have had a greater preference for earthenware servingware, and perhaps earthenware tableware as well.

DWELLING TYPE (SF-80 AND WBA ONLY)

Both Types: Dwelling	**n**	**mnig**	**pctserv**	**servingg**	**tableg**	**asiaport**	**asiaporg**	**porct**	**porcg**
Com. w/ lodging	1	10	7	1	10	0.0	0.0	60.0	6.2
Lodgings	1	62	14	9	53	0.0	0.0	9.5	5.9
Multi-family	3	55	26	14	41	1.8	0.9	17.4	9.2
Single family	12	78	26	18	60	1.3	0.8	21.4	13.2
Unknown	1	87	23	20	67	0.0	0.0	0.0	0.0
Total:	18	70	24	16	54	1.2	0.7	21.1	11.0

Both Uses: Dwelling	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Com. w/ lodging	1	40	4	0.0	0.0	0.0	0.0	0.0	0.0
Lodgings	1	90	56	0.0	0.0	0.0	0.0	0.0	0.0
Multi-family	3	77	42	2.9	1.6	4.0	2.3	0.0	0.0
Single family	12	74	60	2.8	2.4	2.9	2.5	0.7	1.5
Unknown	1	100	87	0.0	0.0	0.0	0.0	0.0	0.0
Total:	18	75	55	2.3	1.9	2.6	2.0	0.5	1.0

Dwelling Type *(continued)*

Servingware Only: Dwelling	n	mnig	asiaport	asiaporg	porct	porcg
Com. w/ lodging	1	1	0.0	0.0	100.0	0.7
Lodgings	1	9	0.0	0.0	33.3	2.9
Multi-family	3	14	3.3	0.6	10.3	1.8
Single family	11	19	0.9	0.1	8.2	1.2
Unknown	1	20	0.0	0.0	0.0	0.0
Total:	17	17	1.1	0.2	14.9	1.3

Servingware Only: Dwelling	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
Com. w/ lodging	1	0	0	0.0	0.0	0.0	0.0	0.0	0.0
Lodgings	1	67	6	0.0	0.0	0.0	0.0	0.0	0.0
Multi-family	3	75	10	9.1	1.6	11.3	2.0	0.0	0.0
Single family	11	79	15	10.4	2.5	11.1	2.6	0.8	0.1
Unknown	1	100	20	0.0	0.0	0.0	0.0	0.0	0.0
Total:	17	74	13	8.3	1.9	9.2	2.0	0.5	0.1

Tableware Only: Dwelling	n	mnig	asiaport	asiaporg	porct	porcg
Com. w/ lodging	1	10	0.0	0.0	57.1	5.5
Lodgings	1	53	0.0	0.0	5.6	2.9
Multi-family	3	41	0.6	0.3	19.7	7.3
Single family	12	60	1.2	0.8	24.8	12.1
Unknown	1	67	0.0	0.0	0.0	0.0
Total:	18	54	0.9	0.6	23.3	9.7

Dwelling Type *(continued)*

Tableware Only: Dwelling	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
Com. w/ lodging	1	43	4	0.0	0.0	0.0	0.0	0.0	0.0
Lodgings	1	94	50	0.0	0.0	0.0	0.0	0.0	0.0
Multi-family	3	79	33	0.0	0.0	0.6	0.3	0.0	0.0
Single family	12	73	46	0.3	0.1	0.3	0.1	0.6	1.4
Unknown	1	100	67	0.0	0.0	0.0	0.0	0.0	0.0
Total:	18	75	43	0.2	0.1	0.3	0.1	0.4	0.9

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)". Variables ending in G are "MNI of the ceramic item per MNI of glass containers". All variables are based on MNI of items.

Comparisons:

All pairs

Single family vs. all others except commercial

Single family vs. all others, including commercial

No significant differences were found.

Interpretations:

There was no significant patterning in ceramic tableware and servingware by dwelling type, nor any obvious patterns in the percentage data. Because of the very small sample sizes, the only comparison really possible here is between single-family and multifamily residences.

TENURE TYPE (SF-80 AND WBA ONLY)

Both Types: Tenure Type	n	mnig	pctserv	servingg	tableg	asiaport	asiaporg	porct	porcg
Owner	5	80	20	15	65	2.4	1.8	27.4	19.5
Tenant (renter)	7	44	27	11	34	1.3	0.6	14.7	6.9
Unknown	5	107	28	27	80	0.0	0.0	15.7	9.2
Total	17	73	25	17	57	1.2	0.8	18.8	11.3

Tenure Type *(continued)*

Both Uses: Tenure Type	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Owner	5	67	57	2.1	1.8	2.5	2.1	0.6	0.2
Tenant (renter)	7	83	37	1.1	0.4	1.1	0.4	0.0	0.0
Unknown	5	78	90	4.8	4.3	5.4	4.7	1.1	3.3
Total	17	77	58	2.5	2.0	2.8	2.2	0.5	1.0

Servingware Only: Tenure Type	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
Owner	4	19	1.1	0.1	8.5	1.3
Tenant (renter)	7	11	2.1	0.3	7.6	0.9
Unknown	5	27	0.0	0.0	13.4	2.0
Total	16	18	1.2	0.2	9.6	1.4

Servingware Only: Tenure Type	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Owner	4	76	15	10.2	2.1	12.2	2.4	2.3	0.3
Tenant (renter)	7	88	9	2.1	0.3	2.1	0.3	0.0	0.0
Unknown	5	68	20	17.2	4.3	18.5	4.5	0.0	0.0
Total	16	79	14	8.9	2.0	9.8	2.2	0.6	0.1

Tableware Only: Tenure Type	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
Owner	5	65	2.4	1.7	31.1	18.4
Tenant (renter)	7	34	0.6	0.2	17.6	5.9
Unknown	5	80	0.0	0.0	16.7	7.2
Total	17	57	0.9	0.6	21.3	10.0

Tenure Type *(continued)*

Tableware Only: Tenure Type	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
Owner	5	66	45	0.2	0.2	0.2	0.2	0.0	0.0
Tenant (renter)	7	82	27	0.3	0.1	0.3	0.1	0.0	0.0
Unknown	5	82	70	0.0	0.0	0.3	0.2	1.4	3.3
Total	17	77	45	0.2	0.1	0.3	0.1	0.4	1.0

Table excludes commercial properties. Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)". Variables ending in G are "MNI of the ceramic item per MNI of glass containers". All variables are based on MNI of items.

Comparisons:

Owner (O) vs. Tenant (T)

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Tenure Status	Variable	Use	Which has more?	Prob.	Sig @ 5%
Owner vs. Tenant	mnig	both	Owner	0.0348	X
Owner vs. Tenant	tableg	table	Owner	0.0513	
Owner vs. Tenant	servingg	serve	Owner	0.0298	X
Owner vs. Tenant	earthg	serve	Owner	0.0992	
Owner vs. Tenant	basicg	serve	Owner	0.0992	
Owner vs. Tenant	basict	serve	Owner	0.0992	

All tenure comparisons exclude commercial properties.

Interpretations:

In contrast to the patterns noted by occupation and ethnicity, the patterning by homeownership status is largely in the quantity of tableware and servingware discarded, rather than the mix of ware materials. The total number of tableware items, servingware items, and both kinds of items combined that homeowners discarded (relative to the number of glass containers that they discarded) was much greater than it was among tenants. That is, homeowners discarded more ceramic tableware and servingware items per glass container. Homeowners also discarded more earthenware servingware than did tenants, relative to their glass and ceramic bottle refuse. The one proportional difference is that the owners discarded a mix of servingware that contained

a higher proportion of "basic," inexpensive ceramic materials, including earthenware and several others, than did renters.

These patterns in the amounts of ceramic wares consumed could have two general interpretations. The most straightforward is that owners simply used and discarded more ceramic tableware and servingware than did renters on a per-capita basis. Another possibility is that owners and renters discarded tableware and servingware at a similar rate, but that owners discarded relatively fewer glass containers. This seems less likely, but cannot be ruled out.

The proportionally greater use among owners of servingware made from "basic" inexpensive ceramic wares, over and above their apparently greater use of servingware overall, suggests that owners may have been more thrifty than renters in the quality of their servingware purchases, even as they spent more on quantity. The percentage data, however, suggest that owners may also have used proportionally more of the expensive Asian and non-Asian porcelains, with a correspondingly lower proportion of relatively lower-cost OP/WIE wares. While these differences are not statistically significant, they cast doubt on any generalizations about the mix of wares used by homeowners.

NEIGHBORHOOD (SF-80 AND WBA ONLY)

Both Uses: SF Neighborhood	**n**	**mnig**	**pctserv**	**servingg**	**tableg**	**asiaport**	**asiaporg**	**porct**	**porcg**
Mission Bay	8	99	25	23	76	0.2	0.2	15.4	10.8
Rincon Hill	10	47	23	10	37	2.0	1.1	25.5	11.2
Total:	18	70	24	16	54	1.2	0.7	21.1	11.0

Both Uses: SF Neighborhood	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Mission Bay	8	79	82	4.1	3.8	4.6	4.1	0.7	2.1
Rincon Hill	10	71	34	0.9	0.4	1.0	0.4	0.3	0.1
Total:	18	75	55	2.3	1.9	2.6	2.0	0.5	1.0

Servingware Only: SF Neighborhood	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
Mission Bay	8	23	0.0	0.0	13.9	1.9
Rincon Hill	9	11	2.2	0.3	15.9	0.8
Total:	17	17	1.1	0.2	14.9	1.3

Neighborhood *(continued)*

Servingware Only: SF Neighborhood	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
Mission Bay	8	70	17	15.3	3.7	16.5	3.9	0.0	0.0
Rincon Hill	9	78	9	2.2	0.3	2.7	0.4	1.0	0.1
Total:	17	74	13	8.3	1.9	9.2	2.0	0.5	0.1

Tableware Only: SF Neighborhood	n	mnig				asiaport	asiaporg	porct	porcg
Mission Bay	8	76				0.3	0.2	16.4	8.8
Rincon Hill	10	37				1.4	0.8	28.8	10.4
Total:	18	54				0.9	0.6	23.3	9.7

Tableware Only: SF Neighborhood	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
Mission Bay	8	82	64	0.1	0.1	0.4	0.2	0.9	2.1
Rincon Hill	10	70	25	0.2	0.1	0.2	0.1	0.0	0.0
Total:	18	75	43	0.2	0.1	0.3	0.1	0.4	0.9

Table includes commercial properties. Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)." Variables ending in G are "MNI of the ceramic item per MNI of glass containers." All variables are based on MNI of items.

Comparisons:

Mission Bay vs. Rincon Hill

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Neighborhood	Variable	Use	Which has more?	Prob.	Sig @ 5%
Mission Bay vs. Rincon Hill	mnig	both	Mission Bay	0.0685	
Mission Bay vs. Rincon Hill	servingg	both	Mission Bay	0.0832	
Mission Bay vs. Rincon Hill	asiaport	both	Rincon Hill	0.0383	X
Mission Bay vs. Rincon Hill	asiaporg	both	Rincon Hill	0.0770	
Mission Bay vs. Rincon Hill	asiaport	serve	Rincon Hill	0.0962	

Significant Differences: ***(continued)***

Neighborhood	Variable	Use	Which has more?	Prob.	Sig @ 5%
Mission Bay vs. Rincon Hill	asiaporg	serve	Rincon Hill	0.0962	
Mission Bay vs. Rincon Hill	opg	both	Mission Bay	0.0685	
Mission Bay vs. Rincon Hill	opg	table	Mission Bay	0.0561	
Mission Bay vs. Rincon Hill	eartht	both	Mission Bay	0.0069	X
Mission Bay vs. Rincon Hill	earthg	both	Mission Bay	0.0039	X
Mission Bay vs. Rincon Hill	eartht	serve	Mission Bay	0.0032	X
Mission Bay vs. Rincon Hill	earthg	serve	Mission Bay	0.0045	X
Mission Bay vs. Rincon Hill	basict	both	Mission Bay	0.0069	X
Mission Bay vs. Rincon Hill	basicg	both	Mission Bay	0.0052	X
Mission Bay vs. Rincon Hill	basict	serve	Mission Bay	0.0032	X
Mission Bay vs. Rincon Hill	basicg	serve	Mission Bay	0.0061	X

Interpretations:

The two neighborhoods in the San Francisco sample differed both in the amount and mix of ceramic servingware and tableware. Mission Bay households discarded more items of servingware, and more items of servingware and tableware combined, per glass container than did Rincon Hill households. That is, unless the Mission Bay households consumed more glass containers per capita, it appears that they disposed of more servingware and combined servingware and tableware per capita. The percentage data suggest the same trend towards relatively greater amounts of tableware from Mission Bay households, although the difference is not statistically significant.

The analysis of meat cuts suggested that Rincon Hill was the wealthier neighborhood of the two, and the mixes of ceramic wares clearly corroborate that impression. Households in the Rincon Hill neighborhood, which included two of the three wealthy professional households in the San Francisco sample, discarded more of the expensive Asian porcelains than did households in Mission Bay, as a proportion of servingware, as a proportion of all servingware and tableware combined, and relative to glass containers. The percentage data suggest that Rincon Hill households also discarded a higher proportion of porcelain servingware and tableware, although the patterns are not significant. The percentage data suggest a conflicting pattern, in which Mission Bay households discarded more porcelain tableware relative to glass and ceramic containers, but this may be due to the greater quantity overall of tableware in Mission Bay. In any case, only about 15% of all porcelain was used as tableware, so this difference may not have been very important economically. Mission Bay households conform to the lower-status pattern in discarding more OP/WIE tableware relative to glass containers, although the pattern for OP/WIE servingware is neither significant nor

consistent in the percentage data. Mission Bay households also discarded more earthenwares as a proportion of servingware, as a proportion of servingware and tableware combined, and relative to glass containers. The same patterns hold when assorted other inexpensive wares are combined with earthenwares. They are not significant, nor clear in the percentage data for the two earthenware and four "basic" ware tableware items, but that is to be expected from such small samples.

It is interesting that the households with the lower-status tableware and servingware assemblages, presumably because they were generally of lower economic standing, disposed of greater quantities of tableware and servingware relative to glass containers, which should roughly measure other kinds of food, drink, and other consumption. Maybe these lower-status households broke ceramic servingware and tableware more often, maybe precisely because the pieces were cheaper and less valued. Alternatively, the occupation analysis suggested that higher-status households may have sold or given away some of their servingware and tableware, which could have reduced the amount that ended up in their garbage.

STREET FRONTAGE TYPE (SF-80 AND WBA ONLY)

Both Uses: Street Frontage	**n**	**mnig**	**pctserv**	**servingg**	**tableg**	**asiaport**	**asiaporg**	**porct**	**porcg**
Interior	11	81	29	21	60	0.7	0.3	12.1	7.8
Main	4	69	16	10	59	3.5	2.5	34.3	23.3
Numbered	3	30	17	5	25	0.0	0.0	36.1	6.3
Total:	18	70	24	16	54	1.2	0.7	21.1	11.0

Both Uses: Street Frontage	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Interior	11	83	69	3.0	2.6	3.3	2.8	0.5	1.5
Main	4	60	41	1.2	1.0	1.7	1.3	0.7	0.3
Numbered	3	63	23	1.3	0.2	1.3	0.2	0.0	0.0
Total:	18	75	55	2.3	1.9	2.6	2.0	0.5	1.0

Street Frontage Type *(continued)*

Servingware Only: Street Frontage	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
Interior	11	21	1.4	0.2	5.6	1.1
Main	3	14	1.5	0.2	11.3	1.8
Numbered	3	5	0.0	0.0	52.8	1.7
Total:	17	17	1.1	0.2	14.9	1.3

Servingware Only: Street Frontage	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Interior	11	82	17	10.3	2.6	10.9	2.7	0.0	0.0
Main	3	76	10	5.2	1.0	8.0	1.5	3.0	0.4
Numbered	3	43	3	4.2	0.2	4.2	0.2	0.0	0.0
Total:	17	74	13	8.3	1.9	9.2	2.0	0.5	0.1

Tableware Only: Street Frontage	**n**	**mnig**				**asiaport**	**asiaporg**	**porct**	**porcg**
Interior	11	60				0.2	0.1	14.3	6.6
Main	4	59				3.4	2.3	38.5	22.0
Numbered	3	25				0.0	0.0	35.8	4.7
Total:	18	54				0.9	0.6	23.3	9.7

Tableware Only: Street Frontage	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Interior	11	84	52	0.2	0.1	0.4	0.1	0.6	1.5
Main	4	58	34	0.3	0.2	0.3	0.2	0.0	0.0
Numbered	3	64	20	0.0	0.0	0.0	0.0	0.0	0.0
Total:	18	75	43	0.2	0.1	0.3	0.1	0.4	0.9

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)." Variables ending in G are "MNI of the ceramic item per MNI of glass containers." All variables are based on MNI of items.

Comparisons:

All pairs.

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Street Frontage	Variable	Use	Which has more?	Prob.	Sig @ 5%
Numbered vs. Interior	mnig	serve	Interior	0.0195	X
Numbered vs. Interior	servingg	both	Interior	0.0195	X
Main vs. Numbered	asiaport	both	Main	0.0436	X
Main vs. Numbered	asiaporg	both	Main	0.0436	X
Main vs. Interior	asiaport	both	Main	0.0400	X
Main vs. Interior	asiaporg	both	Main	0.0088	X
Main vs. Numbered	asiaport	table	Main	0.0436	X
Main vs. Numbered	asiaporg	table	Main	0.0436	X
Main vs. Interior	asiaport	table	Main	0.0040	X
Main vs. Interior	asiaporg	table	Main	0.0014	X
Main vs. Interior	porct	both	Main	0.0777	
Main vs. Interior	porcg	both	Main	0.0581	
Main vs. Numbered	porcg	table	Main	0.0518	
Main vs. Interior	porcg	table	Main	0.0581	
Main vs. Numbered	porct	serve	Numbered	0.0809	
Numbered vs. Interior	porct	serve	Numbered	0.0078	X
Main vs. Interior	opt	table	Interior	0.0581	
Numbered vs. Interior	opg	serve	Interior	0.0195	X
Main vs. Numbered	opg	serve	Main	0.0809	
Main vs. Interior	misct	serve	Main	0.0817	
Main vs. Interior	miscg	serve	Main	0.0817	

Interpretations:

Households that fronted onto interior streets discarded more pieces of servingware, and more pieces of servingware and tableware combined, per glass container than did households that fronted onto numbered streets. Both patterns are significant with 5% confidence. The percentage data suggest corroborating patterns, although none are significant. Specifically, households fronting on interior streets seem to have a considerably higher proportion of servingware among their servingware and tableware assemblages. They have more items of servingware relative to glass container

refuse than do households fronting on either numbered or main streets, and more items of tableware relative to glass container refuse than do households facing onto numbered streets, although by this measure of tableware they average about the same as households facing main streets. That is, households facing interior streets seem to have discarded both a larger amount of servingware and tableware, and a mix relatively richer in servingware than did other households.

Most of the other differences by street frontage appear to parallel the presumably economic ones noted in the occupation analysis. Houses fronting on main streets had significantly more Asian porcelain in their refuse, both absolutely relative to glass containers, and proportionally relative to all tableware and to tableware and servingware combined, than did households facing either numbered or interior streets, all with 5% confidence. However, since all three of the wealthy professional households are among the four households fronting on main streets, the role of street frontage and professional status cannot be separated. Similarly, houses facing main streets tended to have more non-Asian porcelain tableware and tableware combined with servingware than did either interior or numbered streets, although not all of the relevant comparisons are significant, and of those, none reach 5% confidence. This pattern is well indicated, but is not as overwhelming as the one for Asian porcelain. In fact, households facing numbered streets actually exceed those on main streets as well as those on interior streets in the proportion of servingware that were of porcelain.

Households on numbered streets also rival those on main streets in having even fewer of the moderate-status OP/WIE servingware. Households on interior streets had a higher proportion of OP/WIE tableware than did those on main streets, and more OP/WIE servingware relative to glass containers than did households on numbered streets. In all, these ceramics suggest not only that the largely wealthy professional households facing main streets discarded the highest-status assemblage of tableware and servingware, but also that households facing numbered streets had tableware and servingware assemblages of an intermediate status, and that households fronting on interior streets had the assemblages most like those of the lower-status occupation categories.

Not surprisingly, the rare miscellaneous wares that are so concentrated in wealthy professional households are more common in refuse from households facing main streets than from the apparently lowest-status households facing interior streets.

PRIVIES VS. WELLS (SF-80 AND WBA ONLY)

Both Uses: Feature Type	**n**	**mnig**	**pctserv**	**servingg**	**tableg**	**asiaport**	**asiaporg**	**porct**	**porcg**
Privy	15	77	24	17	60	1.3	0.8	19.3	11.8
Well	2	46	31	14	32	0.8	0.2	14.4	7.1
Other/combined	1	10	7	1	10	0.0	0.0	60.0	6.2
Total:	18	70	24	16	54	1.2	0.7	21.1	11.0

Both Uses: Feature Type	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Privy	15	76	61	2.7	2.2	3.0	2.4	0.5	1.2
Well	2	84	38	0.8	0.2	0.8	0.2	0.0	0.0
Other/combined	1	40	4	0.0	0.0	0.0	0.0	0.0	0.0
Total:	18	75	55	2.3	1.9	2.6	2.0	0.5	1.0

Servingware Only: Feature Type	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
Privy	14	18	1.0	0.2	11.0	1.6
Well	2	14	2.5	0.2	0.0	0.0
Other/combined	1	1	0.0	0.0	100.0	0.7
Total:	17	17	1.1	0.2	14.9	1.3

Servingware Only: Feature Type	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Privy	14	76	14	9.8	2.3	10.8	2.4	0.6	0.1
Well	2	95	13	2.5	0.2	2.5	0.2	0.0	0.0
Other/combined	1	0	0	0.0	0.0	0.0	0.0	0.0	0.0
Total:	17	74	13	8.3	1.9	9.2	2.0	0.5	0.1

Privies vs. Wells *(continued)*

Tableware Only: Feature Type	n	mnig	asiaport	asiaporg	porct	porcg
Privy	15	60	1.1	0.7	21.3	10.4
Well	2	32	0.0	0.0	20.7	7.1
Other/combined	1	10	0.0	0.0	57.1	5.5
Total:	18	54	0.9	0.6	23.3	9.7

Tableware Only: Feature Type	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
Privy	15	77	48	0.2	0.1	0.3	0.1	0.5	1.1
Well	2	79	25	0.0	0.0	0.0	0.0	0.0	0.0
Other/combined	1	43	4	0.0	0.0	0.0	0.0	0.0	0.0
Total:	18	75	43	0.2	0.1	0.3	0.1	0.4	0.9

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)". Variables ending in G are "MNI of the ceramic item per MNI of glass containers". All variables are based on MNI of items.

Comparisons:

Privy vs. Well

No significant differences were found.

Interpretations:

There was no significant difference in the ceramic tableware and servingware assemblages from privies and wells in San Francisco. This suggests that the processes that produced the assemblages in the two kinds of features may not have differed too drastically, and that mixing the two kinds of features in analysis may not introduce serious biases.

RESULTS: COMPARISONS BETWEEN SAN FRANCISCO AND OAKLAND PRE-1890 CONTEXTS

ALL SAN FRANCISCO CONTEXTS VS. ALL OAKLAND CONTEXTS

Both Uses: City	**n**	**mnig**	**pctserv**	**servingg**	**tableg**	**asiaport**	**asiaporg**	**porct**	**porcg**
San Francisco	18	70	24	16	54	1.2	0.7	21.1	11.0
Oakland	57	71	23	16	55	1.4	1.0	21.3	14.2
Total:	75	71	23	16	55	1.3	1.0	21.3	13.4

Both Uses: City	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
San Francisco	18	75	55	2.3	1.9	2.6	2.0	0.5	1.0
Oakland	57	71	52	5.3	3.5	5.9	3.8	0.0	0.0
Total:	75	72	53	4.6	3.1	5.1	3.4	0.1	0.2

Servingware Only: City	**n**	**mnig**				**asiaport**	**asiaporg**	**porct**	**porcg**
San Francisco	17	17				1.1	0.2	14.9	1.3
Oakland	55	17				1.5	0.4	11.6	2.2
Total:	72	17				1.4	0.3	12.4	2.0

Servingware Only: City	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
San Francisco	17	74	13	8.3	1.9	9.2	2.0	0.5	0.1
Oakland	55	65	10	19.7	3.5	21.6	3.6	0.0	0.0
Total:	72	67	11	17.0	3.1	18.7	3.3	0.1	0.0

Tableware Only: City	**n**	**mnig**				**asiaport**	**asiaporg**	**porct**	**porcg**
San Francisco	18	54				0.9	0.6	23.3	9.7
Oakland	56	56				1.2	0.7	24.1	12.3
Total:	74	56				1.1	0.6	23.9	11.6

All San Francisco Contexts vs. All Oakland Contexts *(continued)*

Tableware Only: City	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
San Francisco	18	75	43	0.2	0.1	0.3	0.1	0.4	0.9
Oakland	56	74	43	0.2	0.1	0.7	0.3	0.0	0.0
Total:	74	74	43	0.2	0.1	0.6	0.2	0.1	0.2

Table includes commercial properties. Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)." Variables ending in G are "MNI of the ceramic item per MNI of glass containers." All variables are based on MNI of items.

Comparisons:

All San Francisco vs. all Oakland

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

City	Variable	Use	Which has more?	Prob.	Sig @ 5%
San Francisco vs. Oakland	Misct	both	San Francisco	0.0120	X
San Francisco vs. Oakland	Miscg	both	San Francisco	0.0120	X
San Francisco vs. Oakland	Misct	table	San Francisco	0.0120	X
San Francisco vs. Oakland	Miscg	table	San Francisco	0.0120	X
San Francisco vs. Oakland	Misct	serve	San Francisco	0.0120	X
San Francisco vs. Oakland	Miscg	serve	San Francisco	0.0120	X

Interpretations:

The only significant difference in ceramic tableware and servingware between San Francisco and Oakland was that the four examples of rare miscellaneous wares were all found in San Francisco. While this may reflect greater access to exotic ceramics, a pattern comprised of just four purchases could easily have resulted from one or two idiosyncratic wealthy professionals in San Francisco, rather than any general behavioral regularities.

The percentage data for the two cities are very similar in almost every case except for the miscellaneous wares. This lack of city-level differences is in sharp contrast with the strong city-level patterning seen in meat-species preferences, alcoholic-beverage consumption, and other aspects of the glass- and ceramic-container assemblages. While the absence of significant differences does not demonstrate similarity, it is clear that any

differences in the ceramic tableware and servingware assemblages must have been much less pronounced than those in meat species, alcoholic beverages, food packaged in glass and ceramic containers, and so on. This contrast might indicate that these ceramic wares were acquired through structurally different channels that were not subject to city-level processes, such as placing orders by mail or ordering through local dealers who had access to the same or similar manufacturers or distributors. Alternatively, or additionally, it might imply that tastes in ceramic tableware and servingware were more uniform across the region than were food and beverage preferences, perhaps informed more by regional or larger-scale advertising or other publications.

OCCUPATIONS IN SAN FRANCISCO VS. THEIR COUNTERPARTS IN OAKLAND

Both Uses: City & Prof.	**n**	**mnig**	**pctserv**	**servingg**	**tableg**	**asiaport**	**asiaporg**	**porct**	**porcg**
W. Prof. SF	3	73	18	12	62	4.1	3.0	42.0	28.9
W. Prof. Oak	3	52	32	18	34	0.7	0.1	32.6	10.1
W. Prof. total	6	63	25	15	48	2.4	1.6	37.3	19.5
Professional SF	3	39	25	10	29	0.0	0.0	20.0	2.1
Professional Oak	10	87	22	20	67	2.3	1.7	21.8	16.8
Professional total	13	76	22	18	58	1.8	1.3	21.4	13.4
Skilled SF	9	79	26	19	60	1.0	0.4	18.1	9.4
Skilled Oak	22	70	22	15	55	0.8	0.4	21.5	14.6
Skilled total	31	72	23	16	56	0.9	0.4	20.5	13.1
Unskilled SF	2	78	22	18	60	0.0	0.0	8.0	6.0
Unskilled Oak	6	64	38	20	44	1.1	1.2	19.4	10.4
Unskilled total	8	67	34	19	48	0.8	0.9	16.5	9.3

Occupations in San Francisco vs. Their Counterparts in Oakland *(continued)*

Both Uses: City & Prof.	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
W. Prof. SF	3	51	39	1.6	1.3	2.3	1.7	0.9	0.4
W. Prof. Oak	3	66	42	0.7	0.1	0.7	0.1	0.0	0.0
W. Prof. total	6	58	41	1.1	0.7	1.5	0.9	0.5	0.2
Professional SF	3	80	37	0.0	0.0	0.0	0.0	0.0	0.0
Professional Oak	10	69	63	5.9	4.5	7.3	5.1	0.0	0.0
Professional total	13	71	57	4.5	3.5	5.6	4.0	0.0	0.0
Skilled SF	9	77	65	2.7	2.3	3.1	2.5	0.6	1.9
Skilled Oak	22	74	52	4.0	2.3	4.0	2.3	0.0	0.0
Skilled total	31	75	56	3.6	2.3	3.7	2.3	0.2	0.5
Unskilled SF	2	89	69	3.3	3.1	3.3	3.1	0.0	0.0
Unskilled Oak	6	69	46	9.9	5.6	9.9	5.6	0.0	0.0
Unskilled total	8	74	52	8.2	5.0	8.2	5.0	0.0	0.0

Servingware Only: City & Prof.	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
W. Prof. SF	2	17	2.3	0.3	16.9	2.7
W. Prof. Oak	3	18	0.0	0.0	19.0	1.1
W. Prof. total	5	18	0.9	0.1	18.2	1.7
Professional SF	3	10	0.0	0.0	33.3	0.2
Professional Oak	9	22	5.6	1.6	16.9	3.5
Professional total	12	19	4.2	1.2	21.0	2.7
Skilled SF	9	19	1.7	0.3	6.2	0.8
Skilled Oak	22	15	0.0	0.0	12.0	2.5
Skilled total	31	16	0.5	0.1	10.3	2.0
Unskilled SF	2	18	0.0	0.0	25.0	3.8
Unskilled Oak	6	20	0.0	0.0	5.8	1.2
Unskilled total	8	19	0.0	0.0	10.6	1.8

Occupations in San Francisco vs. Their Counterparts in Oakland *(continued)*

Servingware Only: City & Prof.	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
W. Prof. SF	2	64	12	7.8	1.5	12.0	2.2	4.5	0.6
W. Prof. Oak	3	79	17	2.4	0.1	2.4	0.1	0.0	0.0
W. Prof. total	5	73	15	4.6	0.7	6.2	1.0	1.8	0.2
Professional SF	3	67	10	0.0	0.0	0.0	0.0	0.0	0.0
Professional Oak	9	49	12	24.9	5.0	28.6	5.3	0.0	0.0
Professional total	12	53	11	18.7	3.8	21.5	4.0	0.0	0.0
Skilled SF	9	82	15	9.2	2.2	9.9	2.3	0.0	0.0
Skilled Oak	22	70	10	17.7	2.1	17.7	2.1	0.0	0.0
Skilled total	31	73	12	15.2	2.1	15.4	2.2	0.0	0.0
Unskilled SF	2	64	11	11.1	3.1	11.1	3.1	0.0	0.0
Unskilled Oak	6	64	12	28.8	5.6	28.8	5.6	0.0	0.0
Unskilled total	8	64	12	24.3	5.0	24.3	5.0	0.0	0.0

Tableware Only: City & Prof.	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
W. Prof. SF	3	62	4.0	2.8	47.0	27.2
W. Prof. Oak	3	34	1.0	0.1	36.0	9.0
W. Prof. total	6	48	2.5	1.5	41.5	18.1
Professional SF	3	29	0.0	0.0	19.0	1.8
Professional Oak	10	67	0.4	0.3	22.3	13.7
Professional total	13	58	0.3	0.2	21.5	10.9
Skilled SF	9	60	0.5	0.2	22.0	8.7
Skilled Oak	22	55	1.0	0.4	23.8	12.1
Skilled total	31	56	0.9	0.3	23.3	11.1
Unskilled SF	2	60	0.0	0.0	3.9	2.2
Unskilled Oak	5	53	2.0	1.4	23.3	11.0
Unskilled total	7	55	1.4	1.0	17.8	8.5

Occupations in San Francisco vs. Their Counterparts in Oakland *(continued)*

Tableware Only: City & Prof.	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
W. Prof. SF	3	49	32	0.4	0.3	0.4	0.3	0.0	0.0
W. Prof. Oak	3	63	25	0.0	0.0	0.0	0.0	0.0	0.0
W. Prof. total	6	56	28	0.2	0.1	0.2	0.1	0.0	0.0
Professional SF	3	81	27	0.0	0.0	0.0	0.0	0.0	0.0
Professional Oak	10	76	53	0.0	0.0	1.7	0.4	0.0	0.0
Professional total	13	77	47	0.0	0.0	1.3	0.3	0.0	0.0
Skilled SF	9	76	50	0.3	0.1	0.4	0.2	0.8	1.9
Skilled Oak	22	75	42	0.3	0.2	0.3	0.2	0.0	0.0
Skilled total	31	75	44	0.3	0.1	0.3	0.2	0.2	0.5
Unskilled SF	2	96	57	0.0	0.0	0.0	0.0	0.0	0.0
Unskilled Oak	5	75	41	0.0	0.0	0.0	0.0	0.0	0.0
Unskilled total	7	81	45	0.0	0.0	0.0	0.0	0.0	0.0

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)." Variables ending in G are "MNI of the ceramic item per MNI of glass containers." All variables are based on MNI of items.

Comparisons:

San Francisco P+ vs. Oakland P+

San Francisco P vs. Oakland P

San Francisco S vs. Oakland S

San Francisco U vs. Oakland U

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

City and Occupation Category	**Variable**	**Use**	**Which has more?**	**Prob.**	**Sig @ 5%**
SF Wealthy Prof. vs. Oak W. Prof.	asiaporg	both	SF W. Prof.	0.0765	
SF Wealthy Prof. vs. Oak W. Prof.	asiaporg	table	SF W. Prof.	0.0765	
SF Skilled vs. Oakland Skilled	asiaport	serve	SF Skilled	0.0281	X
SF Skilled vs. Oakland Skilled	asiaporg	serve	SF Skilled	0.0281	X
SF Wealthy Prof. vs. Oak W. Prof.	porcg	both	SF W. Prof.	0.0809	

Significant Differences: ***(continued)***

City and Occupation Category	Variable	Use	Which has more?	Prob.	Sig @ 5%
SF Wealthy Prof. vs. Oak W. Prof.	porcg	table	SF W. Prof.	0.0809	
SF Professional vs. Oak Prof.	porcg	both	Oak Professional	0.0743	
SF Professional vs. Oak Prof.	porcg	table	Oak Professional	0.0743	
SF Professional vs. Oak Prof.	eartht	both	Oak Professional	0.0750	
SF Professional vs. Oak Prof.	earthg	both	Oak Professional	0.0754	
SF Professional vs. Oak Prof.	eartht	serve	Oak Professional	0.0534	
SF Professional vs. Oak Prof.	earthg	serve	Oak Professional	0.0552	
SF Professional vs. Oak Prof.	basict	both	Oak Professional	0.0754	
SF Professional vs. Oak Prof.	basicg	both	Oak Professional	0.0750	
SF Professional vs. Oak Prof.	basict	serve	Oak Professional	0.0547	
SF Professional vs. Oak Prof.	basicg	serve	Oak Professional	0.0552	

Interpretations:

This section repeats the same comparisons between cities as in the preceding section, but limits them to a single occupation category in each city. This procedure reduces the sample sizes compared to the whole-city analysis, making the tests less sensitive, but it also reduces possible confounding effects that might confuse the picture if some the between-city differences were expressed differently among different occupation categories. For example, if the lifestyle of wealthy professionals in San Francisco differed from that of wealthy professionals in Oakland, while unskilled laborers lived similarly in both cities, this analysis should bring those patterns out.

While a number of significant differences by city within occupation categories are listed above, the interpretation of these differences and the percentage data is difficult. The differences do not fall into any obvious patterns or trends, and they do not find parallels in the percentage data, which are themselves inconsistent. Among wealthy professionals, those living in San Francisco seem to have had more access to Asian porcelains. A similar pattern in Asian porcelain servingware used by skilled workers is probably best taken with a grain of salt, despite its 5% statistical confidence by two different measures, because it is comprised of just three objects from each city. The picture becomes even murkier in regard to non-Asian porcelains, which seem to have been used in greater quantity in San Francisco among wealthy professionals, but in Oakland among professionals. These same Oakland professionals that seem to have had more of the high-status non-Asian porcelains also appear to have used both proportionally and absolutely more earthenwares than did their San Francisco counterparts, a tendency that persists when various other inexpensive "basic" wares are lumped together with the earthenwares.

Some of these results might be some of the expected spurious significant differences, while others probably result from the very small numbers of some kinds of items that comprise the standardized values. It is unlikely, however, that all of these results can be explained away. Nevertheless, in the absence of interpretable patterns, these comparisons should probably be set aside as uninformative or confusing.

TENURE TYPE IN SAN FRANCISCO VS. OAKLAND

Both Uses: City & Tenure	**n**	**mnig**	**pctserv**	**servingg**	**tableg**	**asiaport**	**asiaporg**	**porct**	**porcg**
SF tenants	7	44	27	11	34	1.3	0.6	14.7	6.9
Oak tenants	24	80	26	18	62	0.8	0.6	20.6	15.6
Total tenants	31	72	26	17	56	0.9	0.6	19.3	13.7
SF owners	5	80	20	15	65	2.4	1.8	27.4	19.5
Oak owners	19	61	25	16	45	1.6	1.0	22.4	12.2
Total owners	24	65	24	16	49	1.8	1.1	23.4	13.8

Both Uses: City & Tenure	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
SF tenants	7	83	37	1.1	0.4	1.1	0.4	0.0	0.0
Oak tenants	24	72	60	5.8	3.8	6.3	4.0	0.0	0.0
Total tenants	31	75	55	4.7	3.1	5.1	3.2	0.0	0.0
SF owners	5	67	57	2.1	1.8	2.5	2.1	0.6	0.2
Oak owners	19	69	44	6.8	3.9	7.0	4.1	0.0	0.0
Total owners	24	69	46	5.8	3.5	6.1	3.7	0.1	0.0

Servingware Only: City & Tenure	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
SF tenants	7	11	2.1	0.3	7.6	0.9
Oak tenants	24	18	0.0	0.0	12.7	2.8
Total tenants	31	17	0.5	0.1	11.6	2.4
SF owners	4	19	1.1	0.1	8.5	1.3
Oak owners	18	17	2.8	0.8	9.4	1.5
Total owners	22	17	2.5	0.7	9.3	1.5

Tenure Type in San Francisco vs. Oakland *(continued)*

Servingware Only: City & Tenure	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
SF tenants	7	88	9	2.1	0.3	2.1	0.3	0.0	0.0
Oak tenants	24	66	12	20.3	3.7	20.3	3.7	0.0	0.0
Total tenants	31	71	11	16.2	2.9	16.2	2.9	0.0	0.0
SF owners	4	76	15	10.2	2.1	12.2	2.4	2.3	0.3
Oak owners	18	60	11	25.3	4.1	28.0	4.3	0.0	0.0
Total owners	22	63	11	22.5	3.7	25.2	3.9	0.4	0.1

Tableware Only: City & Tenure	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
SF tenants	7	34	0.6	0.2	17.6	5.9
Oak tenants	23	65	1.1	0.6	22.1	13.4
Total tenants	30	57	1.0	0.5	21.0	11.6
SF owners	5	65	2.4	1.7	31.1	18.4
Oak owners	19	45	0.7	0.2	27.3	10.8
Total owners	24	49	1.1	0.5	28.1	12.4

Tableware Only: City & Tenure	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
SF tenants	7	82	27	0.3	0.1	0.3	0.1	0.0	0.0
Oak tenants	23	76	50	0.3	0.1	1.0	0.3	0.0	0.0
Total tenants	30	77	45	0.3	0.1	0.8	0.3	0.0	0.0
SF owners	5	66	45	0.2	0.2	0.2	0.2	0.0	0.0
Oak owners	19	72	34	0.1	0.0	0.1	0.0	0.0	0.0
Total owners	24	71	36	0.1	0.1	0.1	0.1	0.0	0.0

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)." Variables ending in G are "MNI of the ceramic item per MNI of glass containers." All variables are based on MNI of items.

Comparisons:

Owners in San Francisco vs. Owners in Oakland

Tenants in San Francisco vs. Tenants in Oakland

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

City and Tenure Type	Variable	Use	Which has more?	Prob.	Sig @ 5%
SF owners vs. Oakland owners	mnig	both	SF owners	0.0465	X
SF owners vs. Oakland owners	mnig	table	SF owners	0.0392	X
SF owners vs. Oakland owners	tableg	both	SF owners	0.0392	X
SF owners vs. Oakland owners	asiaport	table	SF owners	0.0758	
SF owners vs. Oakland owners	asiaporg	table	SF owners	0.0398	X
SF owners vs. Oakland owners	asiaporg	both	SF owners	0.0927	
SF owners vs. Oakland owners	misct	both	SF owners	0.0648	
SF owners vs. Oakland owners	miscg	both	SF owners	0.0648	
SF owners vs. Oakland owners	misct	serve	SF owners	0.0451	X
SF owners vs. Oakland owners	miscg	serve	SF owners	0.0451	X
SF tenants vs. Oakland tenants	mnig	both	Oakland tenants	0.0499	X
SF tenants vs. Oakland tenants	mnig	table	Oakland tenants	0.0241	X
SF tenants vs. Oakland tenants	tableg	both	Oakland tenants	0.0447	X
SF tenants vs. Oakland tenants	asiaport	serve	SF tenants	0.0091	X
SF tenants vs. Oakland tenants	asiaporg	serve	SF tenants	0.0091	X
SF tenants vs. Oakland tenants	porcg	both	Oakland tenants	0.0763	
SF tenants vs. Oakland tenants	porcg	table	Oakland tenants	0.0497	X
SF tenants vs. Oakland tenants	opt	both	SF tenants	0.0886	
SF tenants vs. Oakland tenants	opt	serve	SF tenants	0.0603	
SF tenants vs. Oakland tenants	opg	table	Oakland tenants	0.0527	
SF tenants vs. Oakland tenants	eartht	both	Oakland tenants	0.0197	X
SF tenants vs. Oakland tenants	earthg	both	Oakland tenants	0.0124	X
SF tenants vs. Oakland tenants	eartht	serve	Oakland tenants	0.0129	X
SF tenants vs. Oakland tenants	earthg	serve	Oakland tenants	0.0139	X
SF tenants vs. Oakland tenants	basict	both	Oakland tenants	0.0198	X
SF tenants vs. Oakland tenants	basicg	both	Oakland tenants	0.0124	X
SF tenants vs. Oakland tenants	basict	serve	Oakland tenants	0.0129	X
SF tenants vs. Oakland tenants	basicg	serve	Oakland tenants	0.0139	X

Interpretations:

The relationships between homeownership or renting, living in San Francisco or Oakland, and consumption of ceramic tableware and servingware are contradictory and confusing. Among homeowners, those who lived in San Francisco discarded more ceramic tableware and more tableware and servingware combined relative to glass containers than did homeowners in Oakland. The pattern is exactly reversed among tenants, with tenants in Oakland discarding more ceramic tableware and servingware than did tenants in San Francisco according to the same measures. All of these differences are significant with 5% confidence.

While both tenants and homeowners in San Francisco discarded more Asian porcelain, the pattern is significant among tenants only for servingware (based on just two items), and among homeowners only for tableware (based on just seven items). Homeowners in San Francisco discarded more of the rare miscellaneous servingware than did homeowners in Oakland, again based on just two items. Since they are based on such small numbers of items, these patterns have to be treated with caution.

All the remaining differences are expressed only among tenant households. Tenants in Oakland discarded more porcelain tableware, and more porcelain tableware and servingware combined, than did tenants in San Francisco, relative to their glass container refuse. San Francisco tenants discarded more of the moderate-cost OP/WIE servingware, and servingware combined with tableware, than did Oakland tenants as a proportion of their ceramic servingware and tableware assemblages. These patterns would seem to indicate relatively higher-status ceramic tableware and servingware assemblages among tenants in Oakland, as compared to their counterparts in San Francisco. In a seemingly contradictory pattern, Oakland tenants discarded a larger absolute amount of OP/WIE tableware relative to glass containers. This might not, in fact, contradict the other OP/WIE patterns, since those described the fraction of tableware and servingware that were made of OP/WIE, while the tableware pattern refers to the overall amount discarded. Since Oakland tenants discarded more tableware and servingware overall relative to glass containers, the greater amount of OP/WIE tableware in their refuse might reflect a smaller fraction of a larger total assemblage.

Even if the porcelain and OP/WIE data do suggest that Oakland tenants used a higher-status ceramic tableware and servingware assemblage, the distribution of earthenwares clearly contradicts that conclusion. Tenants in Oakland used more earthenware and inexpensive "basic" ware servingware and earthenware servingware and tableware combined, both as a proportion of the assemblage and relative to glass containers, all with 5% confidence.

The net effect is a tangle of contradictory indications that defy any intelligible generalizations about the differences between homeowners or renters in the two cities. While there appear to have been differences, they are difficult to interpret. Perhaps the most important conclusion is that once again, no general city-level trends were found in the ceramic servingware and tableware. As noted before, this is in contrast to the clear,

crosscutting city-level patterning in meat-species preferences, alcoholic-beverage consumption, and other aspects of glass- and ceramic-container consumption, suggesting that purchase, use, and disposal of ceramic tableware and servingware may have been influenced primarily by different factors that were not specific to each city.

ETHNICITIES IN SAN FRANCISCO VS. THEIR COUNTERPARTS IN OAKLAND

Both Uses: City & Ethnicity	**n**	**mnig**	**pctserv**	**servingg**	**tableg**	**asiaport**	**asiaporg**	**porct**	**porcg**
SF German	4	126	18	27	99	0.4	0.4	22.4	11.7
Oak German	5	66	27	19	46	0.8	0.4	17.2	10.5
Total German	9	92	23	23	69	0.6	0.4	19.5	11.0
SF Irish	6	58	27	15	44	0.3	0.1	15.3	6.8
Oak Irish	13	51	33	16	36	0.4	0.1	19.2	10.0
Total Irish	19	54	31	15	38	0.4	0.1	18.0	9.0
SF U.S. white	3	39	30	11	28	0.6	0.2	14.5	6.6
Oak U.S. white	16	93	23	20	72	1.6	1.1	24.9	19.1
Total U.S. white	19	84	24	19	65	1.4	1.0	23.2	17.1

Both Uses: City & Ethnicity	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
SF German	4	74	107	1.5	2.9	1.7	3.1	1.4	4.2
Oak German	5	76	51	6.1	4.1	6.1	4.1	0.0	0.0
Total German	9	75	76	4.1	3.6	4.2	3.7	0.6	1.9
SF Irish	6	80	49	3.9	2.6	3.9	2.6	0.0	0.0
Oak Irish	13	70	36	10.3	5.7	10.5	5.7	0.0	0.0
Total Irish	19	73	40	8.3	4.7	8.4	4.8	0.0	0.0
SF U.S. white	3	84	32	0.6	0.2	0.6	0.2	0.0	0.0
Oak U.S. white	16	68	69	4.9	3.4	5.6	3.6	0.0	0.0
Total U.S. white	19	70	63	4.2	2.9	4.8	3.1	0.0	0.0

Ethnicities in San Francisco vs. Their Counterparts in Oakland *(continued)*

Servingware Only: City & Ethnicity	n	mnig	asiaport	asiaporg	porct	porcg
SF German	4	27	0.0	0.0	27.8	0.8
Oak German	5	19	0.0	0.0	10.7	2.4
Total German	9	23	0.0	0.0	18.3	1.7
SF Irish	6	15	0.8	0.1	14.9	1.8
Oak Irish	13	16	0.0	0.0	3.8	0.6
Total Irish	19	15	0.3	0.0	7.3	1.0
SF U.S. white	3	11	0.0	0.0	0.0	0.0
Oak U.S. white	16	20	3.1	0.9	16.9	3.5
Total U.S. white	19	19	2.6	0.8	14.2	2.9

Servingware Only: City & Ethnicity	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
SF German	4	65	24	5.9	2.7	6.8	2.9	0.0	0.0
Oak German	5	52	13	37.3	4.1	37.3	4.1	0.0	0.0
Total German	9	58	18	23.4	3.5	23.8	3.6	0.0	0.0
SF Irish	6	70	10	14.4	2.6	14.4	2.6	0.0	0.0
Oak Irish	13	65	10	29.4	5.6	30.7	5.7	0.0	0.0
Total Irish	19	67	10	24.7	4.7	25.5	4.7	0.0	0.0
SF U.S. white	3	100	11	0.0	0.0	0.0	0.0	0.0	0.0
Oak U.S. white	16	65	13	14.7	3.2	14.7	3.2	0.0	0.0
Total U.S. white	19	70	12	12.4	2.7	12.4	2.7	0.0	0.0

Ethnicities in San Francisco vs. Their Counterparts in Oakland *(continued)*

Tableware Only: City & Ethnicity	n	mnig	asiaport	asiaporg	porct	porcg
SF German	4	99	0.5	0.4	23.0	10.9
Oak German	5	46	1.0	0.4	17.5	8.1
Total German	9	69	0.8	0.4	20.0	9.3
SF Irish	6	44	0.0	0.0	16.6	4.9
Oak Irish	12	39	0.6	0.1	26.5	10.2
Total Irish	18	40	0.4	0.0	23.2	8.4
SF U.S. white	3	28	0.8	0.2	18.4	6.6
Oak U.S. white	16	72	0.5	0.2	26.5	15.6
Total U.S. white	19	65	0.5	0.2	25.3	14.2

Tableware Only: City & Ethnicity	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
SF German	4	74	83	0.3	0.2	0.3	0.2	1.7	4.2
Oak German	5	81	38	0.0	0.0	0.0	0.0	0.0	0.0
Total German	9	78	58	0.1	0.1	0.1	0.1	0.8	1.9
SF Irish	6	83	39	0.0	0.0	0.0	0.0	0.0	0.0
Oak Irish	12	73	28	0.2	0.1	0.2	0.1	0.0	0.0
Total Irish	18	76	32	0.1	0.0	0.1	0.0	0.0	0.0
SF U.S. white	3	80	21	0.8	0.2	0.8	0.2	0.0	0.0
Oak U.S. white	16	72	56	0.4	0.2	1.4	0.4	0.0	0.0
Total U.S. white	19	73	51	0.4	0.2	1.3	0.4	0.0	0.0

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)." Variables ending in G are "MNI of the ceramic item per MNI of glass containers." All variables are based on MNI of items.

Comparisons:

San Francisco German vs. Oakland German

San Francisco Irish vs. Oakland Irish

San Francisco U.S.-born white vs. Oakland U.S.-born white

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

City and Ethnicity	Variable	Use	Which has more?	Prob.	Sig @ 5%
SF Irish vs. Oakland Irish	porct	serve	SF Irish	0.0486	X
SF Irish vs. Oakland Irish	porcg	serve	SF Irish	0.0628	
SF U.S. white vs. Oakland U.S. white	opt	serve	SF U.S. white	0.0443	X

Interpretations:

Once again, there is little clear or intelligible patterning by city when the analysis is limited to subgroups, in this case households of like ethnicity. Irish households in San Francisco used both relatively and absolutely more non-Asian porcelain servingware than did their counterparts in Oakland. Neither of the other two ethnic groups, nor the cities lumped as a whole, showed a similar trend. U.S.-born whites in San Francisco discarded a mix of servingware with a higher proportion of the OP/WIE material than did their counterparts in Oakland. No other patterns corroborate this difference or suggest possible general explanations.

NEIGHBORHOODS IN SAN FRANCISCO VS. PRE-1890 NEIGHBORHOODS IN OAKLAND

Both Uses: Neighborhood	n	mnig	pctserv	servingg	tableg	asiaport	asiaporg	porct	porcg
Mission Bay	8	99	25	23	76	0.2	0.2	15.4	10.8
Rincon Hill	10	47	23	10	37	2.0	1.1	25.5	11.2
All San Francisco	18	70	24	16	54	1.2	0.7	21.1	11.0
East of Market	20	67	29	18	49	1.2	0.9	25.0	14.7
West of Market	17	82	24	19	64	2.4	1.6	29.1	21.5
Oakland Point	20	66	18	12	54	0.7	0.6	11.1	7.5
All Oakland	57	71	23	16	55	1.4	1.0	21.3	14.2

Neighborhoods in San Francisco vs. Pre-1890 Neighborhoods in Oakland *(continued)*

Both Uses: Neighborhood	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Mission Bay	8	79	82	4.1	3.8	4.6	4.1	0.7	2.1
Rincon Hill	10	71	34	0.9	0.4	1.0	0.4	0.3	0.1
All San Francisco	18	75	55	2.3	1.9	2.6	2.0	0.5	1.0
East of Market	20	67	47	6.1	4.6	6.5	4.8	0.0	0.0
West of Market	17	61	55	6.4	3.6	7.0	3.9	0.0	0.0
Oakland Point	20	84	55	3.6	2.3	4.3	2.7	0.0	0.0
All Oakland	57	71	52	5.3	3.5	5.9	3.8	0.0	0.0

Servingware Only: Neighborhood	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
Mission Bay	8	23	0.0	0.0	13.9	1.9
Rincon Hill	9	11	2.2	0.3	15.9	0.8
All San Francisco	17	17	1.1	0.2	14.9	1.3
East of Market	19	19	0.5	0.2	16.7	2.9
West of Market	16	20	4.7	1.1	17.1	3.8
Oakland Point	20	12	0.0	0.0	2.2	0.4
All Oakland	55	17	1.5	0.4	11.6	2.2

Servingware Only: Neighborhood	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Mission Bay	8	70	17	15.3	3.7	16.5	3.9	0.0	0.0
Rincon Hill	9	78	9	2.2	0.3	2.7	0.4	1.0	0.1
All San Francisco	17	74	13	8.3	1.9	9.2	2.0	0.5	0.1
East of Market	19	58	11	20.7	4.6	24.2	4.9	0.0	0.0
West of Market	16	58	11	20.0	3.9	20.0	3.9	0.0	0.0
Oakland Point	20	77	9	18.7	2.1	20.6	2.3	0.0	0.0
All Oakland	55	65	10	19.7	3.5	21.6	3.6	0.0	0.0

Neighborhoods in San Francisco vs. Pre-1890 Neighborhoods in Oakland *(continued)*

Tableware Only: Neighborhood	n	mnig	asiaport	asiaporg	porct	porcg
Mission Bay	8	76	0.3	0.2	16.4	8.8
Rincon Hill	10	37	1.4	0.8	28.8	10.4
All San Francisco	18	54	0.9	0.6	23.3	9.7
East of Market	19	52	1.5	0.8	26.9	12.6
West of Market	17	64	1.3	0.7	33.8	18.0
Oakland Point	20	54	0.9	0.6	13.2	7.1
All Oakland	56	56	1.2	0.7	24.1	12.3

Tableware Only: Neighborhood	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
Mission Bay	8	82	64	0.1	0.1	0.4	0.2	0.9	2.1
Rincon Hill	10	70	25	0.2	0.1	0.2	0.1	0.0	0.0
All San Francisco	18	75	43	0.2	0.1	0.3	0.1	0.4	0.9
East of Market	19	71	38	0.2	0.2	0.2	0.2	0.0	0.0
West of Market	17	64	45	0.0	0.0	1.0	0.2	0.0	0.0
Oakland Point	20	85	46	0.4	0.2	0.8	0.4	0.0	0.0
All Oakland	56	74	43	0.2	0.1	0.7	0.3	0.0	0.0

Table includes commercial properties. Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)." Variables ending in G are "MNI of the ceramic item per MNI of glass containers." All variables are based on MNI of items. Lines for Mission Bay, Rincon Hill, All San Francisco, and All Oakland are copied from earlier parts of this report to facilitate comparisons.

Comparisons:

All pairs of neighborhoods

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Significant differences between Mission Bay and Rincon Hill are copied from an earlier part of this report to facilitate comparisons.

City and Ethnicity	Variable	Use	Which has more?	Prob.	Sig @ 5%
Between cities:					
Rincon H SF vs. West of Mkt Oak	Mnig	both	West o Mkt Oak	0.0788	
Rincon H SF vs. Oak Pt Oak	Mnig	both	Oakland Pt Oak	0.0990	
Mission B SF vs. Oak Pt Oak	Pctserv	both	Mission Bay SF	0.0501	
Mission B SF vs. Oak Pt Oak	Servingg	both	Mission Bay SF	0.0348	X
Mission B SF vs. Oak Pt Oak	Mnig	serve	Mission Bay SF	0.0348	X
Rincon H SF vs. Oak Pt Oak	Tableg	both	Oakland Pt Oak	0.0747	
Rincon H SF vs. Oak Pt Oak	Mnig	table	Oakland Pt Oak	0.0747	
Rincon H SF vs. East of Mkt Oak	Asiaport	serve	Rincon Hill SF	0.0631	
Rincon H SF vs. East of Mkt Oak	asiaporg	serve	Rincon Hill SF	0.0754	
Rincon H SF vs. West of Mkt Oak	Asiaport	both	Rincon Hill SF	0.0999	
Rincon H SF vs. West of Mkt Oak	asiaporg	both	Rincon Hill SF	0.0680	
Rincon H SF vs. Oak Pt Oak	Asiaport	both	Rincon Hill SF	0.0280	X
Rincon H SF vs. Oak Pt Oak	asiaporg	both	Rincon Hill SF	0.0392	X
Rincon H SF vs. Oak Pt Oak	Asiaport	serve	Rincon Hill SF	0.0085	X
Rincon H SF vs. Oak Pt Oak	asiaporg	serve	Rincon Hill SF	0.0085	X
Mission B SF vs. East of Mkt Oak	Porct	both	East of Mkt Oak	0.0983	
Mission B SF vs. East of Mkt Oak	Porct	table	East of Mkt Oak	0.0795	
Mission B SF vs. West of Mkt Oak	Porct	both	West o Mkt Oak	0.0289	X
Mission B SF vs. West of Mkt Oak	Porct	table	West o Mkt Oak	0.0197	X
Mission B SF vs. West of Mkt Oak	porcg	table	West o Mkt Oak	0.0755	
Rincon H SF vs. West of Mkt Oak	porcg	both	West o Mkt Oak	0.0500	X
Rincon H SF vs. West of Mkt Oak	porcg	table	West o Mkt Oak	0.0500	X
Mission B SF vs. Oak Pt Oak	Porct	serve	Mission Bay SF	0.0022	X
Mission B SF vs. Oak Pt Oak	porcg	serve	Mission Bay SF	0.0036	X
Rincon H SF vs. Oak Pt Oak	Porct	both	Rincon Hill SF	0.0661	
Rincon H SF vs. Oak Pt Oak	Porct	table	Rincon Hill SF	0.0661	

Significant Differences: ***(continued)***

City and Ethnicity	Variable	Use	Which has more?	Prob.	Sig @ 5%
Between cities: (continued)					
Mission B SF vs. East of Mkt Oak	Opt	both	Mission Bay SF	0.0268	X
Mission B SF vs. East of Mkt Oak	Opt	table	Mission Bay SF	0.0796	
Mission B SF vs. East of Mkt Oak	Opt	serve	Mission Bay SF	0.0788	
Rincon H SF vs. East of Mkt Oak	Opg	table	East of Mkt Oak	0.0940	
Rincon H SF vs. East of Mkt Oak	Opt	serve	Rincon Hill SF	0.0408	X
Mission B SF vs. West of Mkt Oak	Opt	both	Mission Bay SF	0.0144	X
Mission B SF vs. West of Mkt Oak	Opt	table	Mission Bay SF	0.0197	X
Rincon H SF vs. West of Mkt Oak	Opt	serve	Rincon Hill SF	0.0455	X
Mission B SF vs. Oak Pt Oak	Opg	serve	Mission Bay SF	0.0793	
Rincon H SF vs. Oak Pt Oak	Opg	both	Oakland Pt Oak	0.0197	X
Rincon H SF vs. Oak Pt Oak	Opt	table	Oakland Pt Oak	0.0802	
Rincon H SF vs. Oak Pt Oak	Opg	table	Oakland Pt Oak	0.0155	X
Rincon H SF vs. East of Mkt Oak	eartht	both	East of Mkt Oak	0.0077	X
Rincon H SF vs. East of Mkt Oak	earthg	both	East of Mkt Oak	0.0073	X
Rincon H SF vs. East of Mkt Oak	eartht	serve	East of Mkt Oak	0.0027	X
Rincon H SF vs. East of Mkt Oak	earthg	serve	East of Mkt Oak	0.0041	X
Rincon H SF vs. West of Mkt Oak	eartht	both	West o Mkt Oak	0.0934	
Rincon H SF vs. West of Mkt Oak	earthg	both	West o Mkt Oak	0.0788	
Rincon H SF vs. West of Mkt Oak	eartht	serve	West o Mkt Oak	0.0331	X
Rincon H SF vs. West of Mkt Oak	earthg	serve	West o Mkt Oak	0.0476	X
Rincon H SF vs. Oak Pt Oak	eartht	both	Oakland Pt Oak	0.0702	
Rincon H SF vs. Oak Pt Oak	earthg	both	Oakland Pt Oak	0.0486	X
Rincon H SF vs. Oak Pt Oak	eartht	serve	Oakland Pt Oak	0.0887	
Rincon H SF vs. Oak Pt Oak	earthg	serve	Oakland Pt Oak	0.0889	
Rincon H SF vs. East of Mkt Oak	basict	both	East of Mkt Oak	0.0089	X
Rincon H SF vs. East of Mkt Oak	basicg	both	East of Mkt Oak	0.0083	X
Rincon H SF vs. East of Mkt Oak	basict	serve	East of Mkt Oak	0.0032	X
Rincon H SF vs. East of Mkt Oak	basicg	serve	East of Mkt Oak	0.0048	X
Rincon H SF vs. West of Mkt Oak	basicg	both	West o Mkt Oak	0.0883	
Rincon H SF vs. West of Mkt Oak	basict	serve	West o Mkt Oak	0.0331	X

Significant Differences: ***(continued)***

City and Ethnicity	Variable	Use	Which has more?	Prob.	Sig @ 5%
Between cities: (continued)					
Rincon H SF vs. West of Mkt Oak	basicg	serve	West o Mkt Oak	0.0548	
Rincon H SF vs. Oak Pt Oak	basict	both	Oakland Pt Oak	0.0601	
Rincon H SF vs. Oak Pt Oak	basicg	both	Oakland Pt Oak	0.0486	X
Rincon H SF vs. Oak Pt Oak	basict	serve	Oakland Pt Oak	0.0795	
Rincon H SF vs. Oak Pt Oak	basicg	serve	Oakland Pt Oak	0.0798	
Within San Francisco:					
Mission Bay vs. Rincon Hill	Mnig	both	Mission Bay	0.0685	
Mission Bay vs. Rincon Hill	servingg	both	Mission Bay	0.0832	
Mission Bay vs. Rincon Hill	asiaport	both	Rincon Hill	0.0383	X
Mission Bay vs. Rincon Hill	asiaporg	both	Rincon Hill	0.0770	
Mission Bay vs. Rincon Hill	asiaport	serve	Rincon Hill	0.0962	
Mission Bay vs. Rincon Hill	asiaporg	serve	Rincon Hill	0.0962	
Mission Bay vs. Rincon Hill	Opg	both	Mission Bay	0.0685	
Mission Bay vs. Rincon Hill	Opg	table	Mission Bay	0.0561	
Mission Bay vs. Rincon Hill	eartht	both	Mission Bay	0.0069	X
Mission Bay vs. Rincon Hill	earthg	both	Mission Bay	0.0039	X
Mission Bay vs. Rincon Hill	eartht	serve	Mission Bay	0.0032	X
Mission Bay vs. Rincon Hill	earthg	serve	Mission Bay	0.0045	X
Mission Bay vs. Rincon Hill	basict	both	Mission Bay	0.0069	X
Mission Bay vs. Rincon Hill	basicg	both	Mission Bay	0.0052	X
Mission Bay vs. Rincon Hill	basict	serve	Mission Bay	0.0032	X
Mission Bay vs. Rincon Hill	basicg	serve	Mission Bay	0.0061	X
Within Oakland:					
Oak Pt Oak vs. East of Mkt Oak	pctserv	both	East of Mkt Oak	0.0199	X
Oak Pt Oak vs. West of Mkt Oak	servingg	both	West o Mkt Oak	0.0721	
Oak Pt Oak vs. West of Mkt Oak	Mnig	serve	West o Mkt Oak	0.0280	X
Oak Pt Oak vs. East of Mkt Oak	servingg	both	East of Mkt Oak	0.0720	
Oak Pt Oak vs. East of Mkt Oak	mnig	serve	East of Mkt Oak	0.0315	X
Oak Pt Oak vs. West of Mkt Oak	porct	both	West o Mkt Oak	0.0007	X
Oak Pt Oak vs. West of Mkt Oak	porcg	both	West o Mkt Oak	0.0021	X

Significant Differences: ***(continued)***

City and Ethnicity	Variable	Use	Which has more?	Prob.	Sig @ 5%
Within Oakland: (continued)					
Oak Pt Oak vs. West of Mkt Oak	porct	table	West o Mkt Oak	0.0017	X
Oak Pt Oak vs. West of Mkt Oak	porcg	table	West o Mkt Oak	0.0030	X
Oak Pt Oak vs. West of Mkt Oak	porct	serve	West o Mkt Oak	0.0047	X
Oak Pt Oak vs. West of Mkt Oak	porcg	serve	West o Mkt Oak	0.0050	X
Oak Pt Oak vs. East of Mkt Oak	porct	both	East of Mkt Oak	0.0023	X
Oak Pt Oak vs. East of Mkt Oak	porcg	both	East of Mkt Oak	0.0147	X
Oak Pt Oak vs. East of Mkt Oak	porct	table	East of Mkt Oak	0.0055	X
Oak Pt Oak vs. East of Mkt Oak	porcg	table	East of Mkt Oak	0.0234	X
Oak Pt Oak vs. East of Mkt Oak	porct	serve	East of Mkt Oak	0.0022	X
Oak Pt Oak vs. East of Mkt Oak	porcg	serve	East of Mkt Oak	0.0040	X
Oak Pt Oak vs. West of Mkt Oak	opt	both	Oakland Pt Oak	0.0002	X
Oak Pt Oak vs. West of Mkt Oak	opt	table	Oakland Pt Oak	0.0018	X
Oak Pt Oak vs. West of Mkt Oak	opt	serve	Oakland Pt Oak	0.0348	X
Oak Pt Oak vs. East of Mkt Oak	opt	both	Oakland Pt Oak	0.0006	X
Oak Pt Oak vs. East of Mkt Oak	opt	table	Oakland Pt Oak	0.0063	X
Oak Pt Oak vs. East of Mkt Oak	opt	serve	Oakland Pt Oak	0.0154	X

The tables below summarize these comparisons between neighborhoods:

Key: The first letter of the neighborhood that ranks higher for the given variable is indicated in lower case for a difference significant at the 10% level, or upper case for a difference significant at the 5% level.

Comparison	mnig both	pctsrv	servingg	mnig serving	tableg	mnig table
Mission B vs. East of Mkt						
Mission B vs. West Mkt						
Mission B vs. Oak Pt		m	M	M		
Mission B vs. Rincon H	m		m			
Rincon H vs. East of Mkt						
Rincon H vs. West Mkt	w					
Rincon H vs. Oak Pt	o				o	o
West of Mkt vs. East Mkt						
West of Mkt vs. Oak Pt			w	W		
East of Mkt vs. Oak Pt		E	e	E		
All SF vs. all Oakland						

Comparison	asiaport both	asiaporg both	asiaport serving	asiaporg serving	asiaport table	asiaporg table
Mission B vs. East of Mkt						
Mission B vs. West Mkt						
Mission B vs. Oak Pt						
Mission B vs. Rincon H	R	r	r	r		
Rincon H vs. East of Mkt			r	r		
Rincon H vs. West Mkt	r	r				
Rincon H vs. Oak Pt	R	R	R	R		
West of Mkt vs. East Mkt						
West of Mkt vs. Oak Pt						
East of Mkt vs. Oak Pt						
All SF vs. all Oakland						

Comparisons between Neighborhoods *(continued)*

Comparison	porct both	porcg both	porct serving	porcg serving	porct table	porcg table
Mission B vs. East of Mkt	e				e	
Mission B vs. West Mkt	W				W	w
Mission B vs. Oak Pt			M	M		
Mission B vs. Rincon H						
Rincon H vs. East of Mkt						
Rincon H vs. West Mkt		W				W
Rincon H vs. Oak Pt	r				r	
West of Mkt vs. East Mkt						
West of Mkt vs. Oak Pt	W	W	W	W	W	W
East of Mkt vs. Oak Pt	E	E	E	E	E	E
All SF vs. all Oakland						

Comparison	opt both	opg both	opt serving	opg serving	opt table	opg table
Mission B vs. East of Mkt	M		m		m	
Mission B vs. West Mkt	M				M	
Mission B vs. Oak Pt				m		
Mission B vs. Rincon H		m				m
Rincon H vs. East of Mkt			R			e
Rincon H vs. West Mkt			R			
Rincon H vs. Oak Pt		O			o	O
West of Mkt vs. East Mkt						
West of Mkt vs. Oak Pt	O		O		O	
East of Mkt vs. Oak Pt	O		O		O	
All SF vs. all Oakland						

Comparisons between Neighborhoods *(continued)*

Comparison	eartht both	earthg both	eartht serving	earthg serving	eartht table	earthg table
Mission B vs. East of Mkt						
Mission B vs. West Mkt						
Mission B vs. Oak Pt						
Mission B vs. Rincon H	M	M	M	M		
Rincon H vs. East of Mkt	E	E	E	E		
Rincon H vs. West Mkt	w	w	W	W		
Rincon H vs. Oak Pt	o	O	o	o		
West of Mkt vs. East Mkt						
West of Mkt vs. Oak Pt						
East of Mkt vs. Oak Pt						
All SF vs. all Oakland						

Comparison	basict both	basicg both	basict serving	basicg serving	basict table	basicg table
Mission B vs. East of Mkt						
Mission B vs. West Mkt						
Mission B vs. Oak Pt						
Mission B vs. Rincon H	M	M	M	M		
Rincon H vs. East of Mkt	E	E	E	E		
Rincon H vs. West Mkt		w	W	w		
Rincon H vs. Oak Pt	o	O	o	o		
West of Mkt vs. East Mkt						
West of Mkt vs. Oak Pt						
East of Mkt vs. Oak Pt						
All SF vs. all Oakland						

Interpretations:

As in the analyses of glass and ceramic containers and meat consumption, the disposal of ceramic tableware and servingware was strongly patterned by the neighborhood in which a household was located. Most of this patterning corresponds roughly to the economic or status scale of ceramic tableware and servingware use noted in the occupation analysis, in which Asian porcelains are most strongly associated with

high status, non-Asian porcelains somewhat less so, OP/WIE tableware are associated with the middle- to low-status range, and earthenware and the more inclusive inexpensive "basic" ware category are most strongly associated with the lowest status or economic standing.

Households in the apparently prosperous Rincon Hill neighborhood discarded less ceramic tableware and servingware relative to their glass container consumption than did households in the Mission Bay, West of Market, or Oakland Point neighborhoods. As noted earlier, this could suggest that the high-status Rincon Hill households tended to break their ceramic tableware and servingware at a relatively lower rate, or that they were more likely to give away or sell them rather than discarding them with the trash.

Households in the Mission Bay neighborhood discarded more servingware than did those in either Rincon Hill or Oakland Point. Specifically, Mission Bay households discarded a mix of tableware and servingware with a significantly higher percentage of servingware than did Oakland Point households. They also discarded more servingware relative to glass containers than did households in either Rincon Hill or Oakland Point. This tendency is difficult to interpret, but it could be related in some way to the Mission Bay neighborhood's probable position as the lowest-status neighborhood in the study.

Within Oakland, the Oakland Point neighborhood stands out as different in a variety of ways. Oakland Point appeared to be an outlier among Oakland neighborhoods in the glass- and ceramic-container analysis, too, falling by a considerable margin at the low-status end of the scale. Households in the Oakland Point neighborhood, like those in Mission Bay, discarded an unusually large quantity of servingware. Ceramic tableware and servingware refuse from Oakland Point had a higher proportion of servingware than did that from East of Market, and the quantity of servingware relative to glass containers was higher in Oakland Point than in either East of Market or West of Market. This parallel with Mission Bay suggests that high proportions and amounts of servingware may indeed be linked to low status, although why that should be so is not obvious.

Since Asian porcelain was strongly associated with wealthy professional households, it is not surprising that households in the prosperous Rincon Hill neighborhood discarded more Asian porcelain by various measures than did households in any of the other neighborhoods. The pattern is not significant for all the relevant variables, and the percentage data suggest an unexpectedly large amount of Asian porcelain in the West of Market neighborhood, but the general trend is inescapable.

Refuse from the Oakland Point neighborhood had less non-Asian porcelain by various measures than did refuse from any other neighborhood. Again, the pattern is not significant for every relevant variable, but it is significant, usually with 5% confidence, for a large portion of them. Once again, Oakland Point was clearly an outlier in the direction of lower status.

Similarly, households in the Mission Bay neighborhood discarded less non-Asian porcelain by various measures than did those either East or West of Market, and the percentage data suggest the same with regard to Rincon Hill, although the differences are not significant. Only Oakland Point households discarded less non-Asian porcelain than did households in Mission Bay. While the proportions and absolute amounts of non-Asian porcelain did not differ significantly among the other three neighborhoods, they clearly differentiate Oakland Point as being the lowest, followed by Mission Bay. This pattern is visible in the percentage data as well.

The occupation analysis suggested that OP/WIE wares were associated with lower-status households, and that impression is supported by the Mission Bay and Oakland Point neighborhoods, which have particularly high proportions and large amounts of OP/WIE wares. Their relative order is reversed, however, with households in the Mission Bay neighborhood having higher proportions and/or absolute amounts of OP/WIE relative to glass containers than any other neighborhood by various measures. Households in the Oakland Point neighborhood discarded proportionally and/or absolutely more OP/WIE relative to glass containers than did those in all other neighborhoods, except Mission Bay. Just as the scarcity of non-Asian porcelain distinguished these two neighborhoods as being probably of lower status than the others, so does the greater presence of OP/WIE.

The one surprising pattern in the distribution of OP/WIE is that households in the Rincon Hill neighborhood discarded more OP/WIE servingware than did households either East or West of Market, both with 5% confidence. This finding is partially contradicted by the fact that East of Market households did discard more OP/WIE tableware than did those in Rincon Hill. Nevertheless, the high representation of OP/WIE servingware in Rincon Hill is unexpected. It might hint that OP/WIE was more acceptable to high-status consumers as servingware than as tableware.

Finally, households in the Rincon Hill neighborhood were distinguished from all others by having lower proportions and absolute amounts of earthenware and "basic" ware servingware and servingware lumped with tableware. This pattern is significant on 31 of the 32 relevant-measures, at 5% confidence for more than half of them. While there were no significant differences, nor clear patterns in the percentage data, to rank the other four neighborhoods by earthenware use, a significantly lower proportion and smaller absolute amount of earthenware clearly distinguished the Rincon Hill households from all the others.

In the analysis of meat-cut data, I suggested a general ranking of neighborhoods based on the mix of meat-cut costs, ranging from the apparently most-prosperous Rincon Hill neighborhood, through the East of Market, West of Market, and Oakland Point neighborhoods, to the markedly least -prosperous Mission Bay neighborhood. While many of the ceramic and glass container data did not fit this ranking well, apparently swamped by overwhelming city-level effects, they did indicate that the Oakland Point neighborhood was extreme among the Oakland neighborhoods. The ceramic tableware and servingware data do fit the ranking based on meat-cut prices

quite well, as shown in the generalized table below, with the highest-status neighborhood at the top.

Neighborhood	Asian Porcelain	Non-Asian Porcelain	OP/WIE	Earthenware	"Basic" Wares
Rincon Hill, SF	High	High	Low	Low	Low
East of Mkt, Oak	Low	High	Low	High	High
West of Mkt, Oak	Low	High	Low	High	High
Oakland Pt, Oak	Low	Lowest	High	High	High
Mission Bay, SF	Low	Low	Highest	High	High

This very close match both supports the general socioeconomic ranking of neighborhoods based on the cost of meat consumed, and reinforces the impression that the purchase, use, and discard of ceramic tableware and servingware were not affected by the city-level processes that had such a large impact on meat species consumed and the distribution of many of the ceramic and glass containers. Not surprisingly, the percentage data generally fit the same neighborhood ranking, although not perfectly. The tables below present most of the same percentage data as given at the beginning of this section, rearranged to facilitate comparison with the status-ranking of the neighborhoods.

Neighborhood	n	mnig	pctsrv
Rincon Hill, SF	10	47	23
East of Mkt, Oak	20	67	29
West of Mkt, Oak	17	82	24
Oakland Pt, Oak	20	66	18
Mission Bay, SF	8	99	25

Neighborhood	n	asiaport both	asiaporg both	asiaport serving*	asiaporg serving*	asiaport table	asiaporg table
Rincon Hill, SF	10	2.0	1.1	2.2	0.3	1.4	0.8
East of Mkt, Oak	20	1.2	0.9	0.5	0.2	1.5	0.8
West of Mkt, Oak	17	2.4	1.6	4.7	1.1	1.3	0.7
Oakland Pt, Oak	20	0.7	0.6	0.0	0.0	0.9	0.6
Mission Bay, SF	8	0.2	0.2	0.0	0.0	0.3	0.2

Neighborhood	n	porct both	porcg both	porct serving	porcg serving	porct table	porcg table
Rincon Hill, SF	10	25.5	11.2	15.9	0.8	28.8	10.4
East of Mkt, Oak	20	25.0	14.7	16.7	2.9	26.9	12.6
West of Mkt, Oak	17	29.1	21.5	17.1	3.8	33.8	18.0
Oakland Pt, Oak	20	11.1	7.5	2.2	0.4	13.2	7.1
Mission Bay, SF	8	15.4	10.8	13.9	1.9	16.4	8.8

Neighborhood	n	opt both	opg both	opt serving	opg serving	opt table	opg table
Rincon Hill, SF	10	71	34	78	9	70	25
East of Mkt, Oak	20	67	47	58	11	71	38
West of Mkt, Oak	17	61	55	58	11	64	45
Oakland Pt, Oak	20	84	55	77	9	85	46
Mission Bay, SF	8	79	82	70	17	82	64

Neighborhood	n	eartht both	earthg both	eartht serving	earthg serving	eartht table*	earthg table*
Rincon Hill, SF	10	0.9	0.4	2.2	0.3	0.2	0.1
East of Mkt, Oak	20	6.1	4.6	20.7	4.6	0.2	0.2
West of Mkt, Oak	17	6.4	3.6	20.0	3.9	0.0	0.0
Oakland Pt, Oak	20	3.6	2.3	18.7	2.1	0.4	0.2
Mission Bay, SF	8	4.1	3.8	15.3	3.7	0.1	0.1

* Total number of items less than 10. Tables include commercial properties. Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)." Variables ending in G are "MNI of the ceramic item per MNI of glass containers." All variables are based on MNI of items.

OCCUPATION IN SAN FRANCISCO AND OAKLAND COMBINED

Both Types: Occupation	**n**	**mnig**	**pctserv**	**servingg**	**tableg**	**asiaport**	**asiaporg**	**porct**	**porcg**
Wealthy Prof.	6	63	25	15	48	2.4	1.6	37.3	19.5
Professional	13	76	22	18	58	1.8	1.3	21.4	13.4
Skilled	31	72	23	16	56	0.9	0.4	20.5	13.1
Unskilled	8	67	34	19	48	0.8	0.9	16.5	9.3
Total:	58	71	24	17	55	1.2	0.8	21.9	13.3

Both Uses: Occupation	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Wealthy Prof.	6	58	41	1.1	0.7	1.5	0.9	0.5	0.2
Professional	13	71	57	4.5	3.5	5.6	4.0	0.0	0.0
Skilled	31	75	56	3.6	2.3	3.7	2.3	0.2	0.5
Unskilled	8	74	52	8.2	5.0	8.2	5.0	0.0	0.0
Total:	58	72	54	4.2	2.8	4.6	2.9	0.1	0.3

Servingware Only: Occupation	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
Wealthy Prof.	5	18	0.9	0.1	18.2	1.7
Professional	12	19	4.2	1.2	21.0	2.7
Skilled	31	16	0.5	0.1	10.3	2.0
Unskilled	8	19	0.0	0.0	10.6	1.8
Total:	56	17	1.2	0.3	13.4	2.1

Servingware Only: Occupation	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Wealthy Prof.	5	73	15	4.6	0.7	6.2	1.0	1.8	0.2
Professional	12	53	11	18.7	3.8	21.5	4.0	0.0	0.0
Skilled	31	73	12	15.2	2.1	15.4	2.2	0.0	0.0
Unskilled	8	64	12	24.3	5.0	24.3	5.0	0.0	0.0
Total:	56	68	12	16.3	2.8	17.2	2.9	0.2	0.0

Occupation in San Francisco and Oakland Combined *(continued)*

Tableware Only: Occupation	n	mnig	asiaport	asiaporg	porct	porcg
Wealthy Prof.	6	48	2.5	1.5	41.5	18.1
Professional	13	58	0.3	0.2	21.5	10.9
Skilled	31	56	0.9	0.3	23.3	11.1
Unskilled	7	55	1.4	1.0	17.8	8.5
Total:	57	56	1.0	0.5	24.1	11.5

Tableware Only: Occupation	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
Wealthy Prof.	6	56	28	0.2	0.1	0.2	0.1	0.0	0.0
Professional	13	77	47	0.0	0.0	1.3	0.3	0.0	0.0
Skilled	31	75	44	0.3	0.1	0.3	0.2	0.2	0.5
Unskilled	7	81	45	0.0	0.0	0.0	0.0	0.0	0.0
Total:	57	74	43	0.2	0.1	0.5	0.2	0.1	0.3

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)." Variables ending in G are "MNI of the ceramic item per MNI of glass containers." All variables are based on MNI of items.

Comparisons:

All pairs of occupation categories

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Occupation Comparisons:	Variable	Use	Which has more?	Prob.	Sig @ 5%
Wealthy Prof. vs. Professional	asiaport	both	Wealthy Prof.	0.0794	
Wealthy Prof. vs. Professional	asiaporg	both	Wealthy Prof.	0.0794	
Wealthy Professional vs. Skilled	asiaport	both	Wealthy Prof.	0.0956	
Wealthy Professional vs. Skilled	asiaporg	both	Wealthy Prof.	0.0955	
Wealthy Professional vs. Unskilled	asiaport	both	Wealthy Prof.	0.0836	
Wealthy Prof. vs. Professional	asiaport	table	Wealthy Prof.	0.0150	X
Wealthy Prof. vs. Professional	asiaporg	table	Wealthy Prof.	0.0150	X

Significant Differences: ***(continued)***

Occupation Comparisons:	Variable	Use	Which has more?	Prob.	Sig @ 5%
Wealthy Professional vs. Skilled	asiaport	table	Wealthy Prof.	0.0497	X
Wealthy Professional vs. Skilled	asiaporg	table	Wealthy Prof.	0.0559	
Wealthy Prof. vs. Professional	porct	table	Wealthy Prof.	0.0940	
Wealthy Professional vs. Skilled	porct	table	Wealthy Prof.	0.0909	
Wealthy Prof. vs. Professional	opt	table	Professional	0.0940	
Wealthy Professional vs. Skilled	opt	table	Skilled	0.0696	
Wealthy Professional vs. Skilled	eartht	both	Skilled	0.0879	
Wealthy Professional vs. Unskilled	eartht	both	Unskilled	0.0639	
Wealthy Professional vs. Unskilled	earthg	both	Unskilled	0.0743	
Wealthy Professional vs. Unskilled	basict	both	Unskilled	0.0743	
Wealthy Professional vs. Skilled	misct	serve	Wealthy Prof.	0.0160	X
Wealthy Professional vs. Skilled	miscg	serve	Wealthy Prof.	0.0160	X

Interpretations:

Lumping all households of similar professions in both cities increases the sample sizes for each occupation category, and in that sense should improve the sensitivity of tests for general differences between occupation categories in the San Francisco Bay area overall prior to 1890. While there are some complications due to the imperfectly balanced distribution of occupations in each city, as discussed in the glass- and ceramic-container analysis, the patterns among the lumped occupations are all as expected and tend to confirm the status-ranking observed in the smaller San Francisco sample.

In the interest of brevity, this analysis treats only comparisons between single occupation categories, not the lumped occupation categories used for the within-city analysis.

In the lumped sample, just as in the smaller sample limited to San Francisco, Asian porcelains are consistently represented in the highest proportions and/or absolute amounts relative to glass containers in wealthy professional households. This trend is significant by at least one measure for wealthy professional households in comparison to professional households, skilled households, and unskilled households.

The lumped sample also confirms the other San Francisco patterns without, unfortunately, adding any new details. Wealthy professional households have a higher proportion of non-Asian porcelain among their tableware in comparison to professional households and skilled households. Both professional households and skilled households have a higher proportion of OP/WIE among their tableware than do wealthy professionals. Wealthy professional households have less earthenware than do skilled

and unskilled households as a proportion of tableware and servingware, and than unskilled households relative to glass containers as well. Unskilled households discarded more of the inexpensive "basic" wares as a proportion of their tableware and servingware than did wealthy professional households. As in the San Francisco sample, wealthy professional households discarded more of the miscellaneous wares than did skilled households, although this pattern is based on just four items and so should not be taken too seriously.

ETHNICITIES IN SAN FRANCISCO AND OAKLAND COMBINED

(only those that are represented in both cities are shown)

Both Types: Ethnicity	**n**	**mnig**	**pctserv**	**servingg**	**tableg**	**asiaport**	**asiaporg**	**porct**	**porcg**
German	9	92	23	23	69	0.6	0.4	19.5	11.0
Irish	19	54	31	15	38	0.4	0.1	18.0	9.0
U.S. white	19	84	24	19	65	1.4	1.0	23.2	17.1
All known	60	70	25	17	54	1.1	0.7	21.6	13.2

Both Types: Ethnicity	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
German	9	75	76	4.1	3.6	4.2	3.7	0.6	1.9
Irish	19	73	40	8.3	4.7	8.4	4.8	0.0	0.0
U.S. white	19	70	63	4.2	2.9	4.8	3.1	0.0	0.0
All known	60	72	53	5.1	3.3	5.4	3.4	0.1	0.3

Servingware Only: Ethnicity	**n**	**mnig**	**asiaport**	**asiaporg**	**porct**	**porcg**
German	9	23	0.0	0.0	18.3	1.7
Irish	19	15	0.3	0.0	7.3	1.0
U.S. white	19	19	2.6	0.8	14.2	2.9
All known	58	17	1.2	0.3	12.8	2.0

Ethnicities in San Francisco and Oakland Combined *(continued)*

Servingware Only: Ethnicity	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
German	9	58	18	23.4	3.5	23.8	3.6	0.0	0.0
Irish	19	67	10	24.7	4.7	25.5	4.7	0.0	0.0
U.S. white	19	70	12	12.4	2.7	12.4	2.7	0.0	0.0
All known	58	66	11	18.3	3.3	19.4	3.4	0.2	0.0

Tableware Only: Ethnicity	n	mnig	asiaport	asiaporg	porct	porcg
German	9	69	0.8	0.4	20.0	9.3
Irish	18	40	0.4	0.0	23.2	8.4
U.S. white	19	65	0.5	0.2	25.3	14.2
All known	59	55	0.8	0.4	24.4	11.5

Tableware Only: Ethnicity	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
German	9	78	58	0.1	0.1	0.1	0.1	0.8	1.9
Irish	18	76	32	0.1	0.0	0.1	0.0	0.0	0.0
U.S. white	19	73	51	0.4	0.2	1.3	0.4	0.0	0.0
All known	59	74	42	0.2	0.1	0.5	0.2	0.1	0.3

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)". Variables ending in G are "MNI of the ceramic item per MNI of glass containers". All variables are based on MNI of items.

Comparisons:

All pairs of common ethnicities

Each of the four common ethnicities vs. the other three lumped together

Each of the four common ethnicities vs. all the others lumped together, including mixed ones (not listed in the table above)

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Ethnicity	Variable	Use	Which has more?	Prob.	Sig @ 5%
Irish vs. all others	pctserv	both	Irish	0.0875	
Irish vs. all others	tableg	both	Non-Irish	0.0586	
Irish vs. all others	asiaport	both	Non-Irish	0.0866	
Irish vs. all others	asiaporg	both	Non-Irish	0.0545	
Irish vs. all others	asiaport	table	Non-Irish	0.0853	
Irish vs. all others	asiaporg	table	Non-Irish	0.0595	
Irish vs. all others	porcg	both	Non-Irish	0.0553	
Irish vs. all others	porcg	table	Non-Irish	0.0822	
Irish vs. all others	eartht	both	Irish	0.0383	X
Irish vs. all others	eartht	serve	Irish	0.0592	
Irish vs. all others	basict	both	Irish	0.0574	
Irish vs. all others	basict	serve	Irish	0.0785	
German vs. all others	misct	table	German	0.0209	X
German vs. all others	miscg	table	German	0.0209	X
U.S. white vs. all others	eartht	serve	Non-U.S. white	0.0975	
U.S. white vs. all others	basict	serve	Non-U.S. white	0.0729	

Interpretations:

As with lumping occupation categories in both cities, lumping ethnicities should improve the resolution of patterns by ethnicity in the pre-1890 San Francisco Bay area. The ethnicity categories, however, are much less evenly divided between the two cities, so the patterns presented could be confounded by any city-level differences and must be examined carefully.

Ethnicity	SF Households	Oakland Households	Total Households	% SF
German	4	5	9	44%
Irish	6	13	19	32%
U.S. white	3	16	19	16%

Within San Francisco, the two English households stood out as different from those of other ethnicities on a variety of grounds, including a greater emphasis on Asian porcelain and non-Asian porcelain. Since there were no English households in the pre-1890 Oakland sample, the English households are not separated out in this analysis.

In this lumped sample, it is the Irish that stand out as particularly distinct. As in San Francisco alone, Irish households discarded more earthenware and "basic" wares as a fraction of their servingware, and as a fraction of servingware and tableware together, than did other households. They also used a higher percentage of servingware as a fraction of servingware and tableware than did other households, and a lower absolute amount of ceramic tableware relative to glass containers. The meaning of this greater use of servingware, and especially earthenware servingware, in Irish households is not obvious. Irish households also discarded less Asian porcelain, both as a fraction of ceramic tableware and combined tableware and servingware, and relative to glass containers. They continued this trend with lower absolute amounts of non-Asian porcelain tableware and combined tableware and servingware, as well. These trends in Asian porcelain, non-Asian porcelain, earthenwares, and "basic" wares should not be surprising, since the Irish households are mostly in the unskilled and skilled occupation categories, and these trends are all associated with lower occupational status.

The ceramic servingware from U.S.-born white households included a smaller fraction of earthenwares and the partially overlapping inexpensive "basic" wares than did other households, suggesting that U.S.-born white households may have averaged a bit above the bottom of the socioeconomic scale.

German households in the lumped sample discarded more of the rare "miscellaneous" tableware than did other households, but since this pattern is comprised of just two items, it is probably not very meaningful.

PRIVIES VS. WELLS IN SAN FRANCISCO AND OAKLAND COMBINED

Both Uses: Feature Type	**n**	**mnig**	**pctserv**	**servingg**	**tableg**	**asiaport**	**asiaporg**	**porct**	**porcg**
Privy	59	69	25	16	53	1.6	1.2	21.5	13.2
Well	4	69	24	17	52	0.4	0.1	9.3	6.1
Total	63	69	24	16	53	1.5	1.1	20.7	12.8

Both Uses: Feature Type	**n**	**opt**	**opg**	**eartht**	**earthg**	**basict**	**basicg**	**misct**	**miscg**
Privy	59	72	51	4.7	3.2	5.1	3.4	0.1	0.3
Well	4	86	58	4.6	5.1	4.6	5.1	0.0	0.0
Total	63	73	52	4.7	3.3	5.0	3.5	0.1	0.3

Privies vs. Wells in San Francisco and Oakland Combined *(continued)*

Servingware Only: Feature Type	n	mnig	asiaport	asiaporg	porct	porcg
Privy	57	17	1.7	0.4	11.0	1.7
Well	4	17	1.3	0.1	0.0	0.0
Total	61	17	1.7	0.4	10.3	1.6

Servingware Only: Feature Type	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
Privy	57	68	11	17.3	3.2	18.8	3.3	0.2	0.0
Well	4	85	12	13.8	5.1	13.8	5.1	0.0	0.0
Total	61	69	11	17.1	3.3	18.5	3.5	0.1	0.0

Tableware Only: Feature Type	n	mnig	asiaport	asiaporg	porct	porcg
Privy	58	54	1.4	0.8	24.4	11.8
Well	4	52	0.0	0.0	13.5	6.1
Total	62	54	1.3	0.7	23.7	11.4

Tableware Only: Feature Type	n	opt	opg	eartht	earthg	basict	basicg	misct	miscg
Privy	58	74	41	0.2	0.1	0.3	0.2	0.1	0.3
Well	4	87	46	0.0	0.0	0.0	0.0	0.0	0.0
Total	62	75	41	0.2	0.1	0.3	0.2	0.1	0.3

Except for the number of features (n), all figures are percentages, and all totals are weighted averages to account for assemblage-sized differences. Numbers of features vary because some features have no tableware, and others have no servingware. Variables ending in T are "percent of all items in the category (tableware, servingware, or both)". Variables ending in G are "MNI of the ceramic item per MNI of glass containers". All variables are based on MNI of items.

Comparisons:

Privy vs. Well

Significant Differences:

All differences listed below are significant to at least the 10% level; those significant at 5% confidence are marked with an X. (No other comparisons reached 10% significance.)

Feature Type	Variable	Use	Which has more?	Prob.	Sig @ 5%
Privy vs. Well	porct	both	Privy	0.0990	
Privy vs. Well	porct	serve	Privy	0.0862	
Privy vs. Well	porcg	serve	Privy	0.0865	

Interpretations:

The purpose of comparing privies and wells is mostly to determine if the deposition processes that created the assemblages found in them were sufficiently different to warrant concern about lumping the two kinds of features for analysis. Lumping the privies and wells from San Francisco and Oakland should increase the sensitivity of the significance tests to relatively more subtle patterns than they could detect in the San Francisco sample alone. In fact, the differences still seem minor. Privies accumulated more non-Asian porcelain, both as a percentage of servingware and servingware combined with tableware, and relative to glass containers, albeit all with only 10% confidence. These three values probably all measure the same general feature of the assemblages, such as an unusually low representation of non-Asian porcelain in a few of the only four wells in the entire lumped sample. While this could reflect a consistent difference in the depositional processes that formed the assemblages in the two kinds of features, it is hard to imagine how such a scenario could work. It is probably safe to regard the difference as a historical accident, and to conclude that including both privies and wells in the same analysis probably introduces no serious distortions.