

Talking to the Dead: Using Correspondence Analysis to Understand Gender, Age, and Time at the Greenville Burial Ground, BC

ABSTRACT

Mortuary data on the Northwest Coast has primarily been used to support claims of status differentiation, age, and burial time. Burial goods and treatments have the potential to share throughout time. Mortuary data, however, can also be used to understand important differences in gender information about the social structures and behaviors of the living, and using correspondence analysis, the meanings of certain burial treatments and goods can be seen to be associated with a specific gender or age group. This study exposes social dynamics and gender-object associations of the living by using correspondence analysis on mortuary data.

INTRODUCTION

The Greenville burial ground is located inland from Prince Rupert Harbor on the Nass River (Figure 1). This site is thought to represent prehistoric Nisga'a burials (Cybulski 1992). The earliest burials date to 566 CE, and Cybulski (1992) identified three time phases for the burials unique to the site. Generally, all the burials date to the Late Developmental stage associated with the Northwest Coast, which lasted from 450 CE to contact. During 1981 excavations, 59 burials were identified. Using correspondence analysis, gender, age and wealth differences can be seen in burial goods and treatments, which correspond with what is expected in achieved status societies.

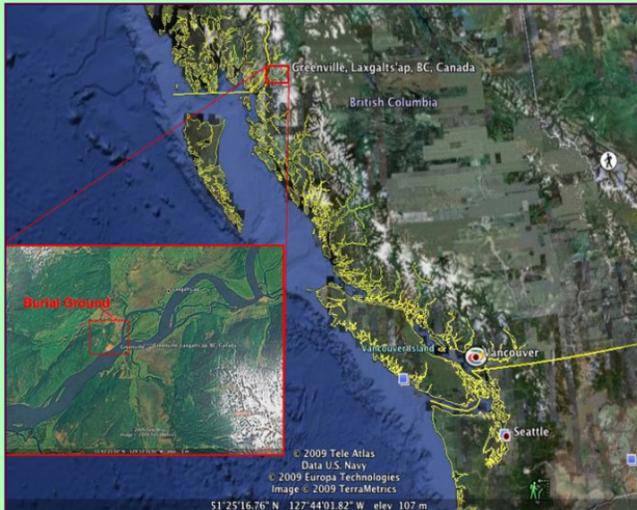


Figure 1: Map of the study area and surrounding region. Courtesy of <http://maps.google.com>

DATA

Although Cybulski (1992) recorded unique differences in grave goods and positioning, he did not analyze this data further. He explained that certain features, like labret marks and box burials, are often markers of status, but he did not examine data like cardinal direction of the burials or flexed direction, which could reveal interesting information about the burial meanings and differences. This data was compiled and recorded from the Greenville burial site report.

The data, recorded in presence-absence form, includes sex, burial direction, elderberry seed associations, labret marks, dogs associated with burials, stone tools or rock formations with burials, and a multitude of other information. Interestingly, Cybulski (1992:63) notes that "the Greenville site appears unique on the coast in not having had any burials associated with objects of personal adornment, the most common form of artifact association with midden burial." Although this data set contains a lot of interesting information, this lack of personal goods makes the Greenville site unique in the region and perhaps different in many ways.

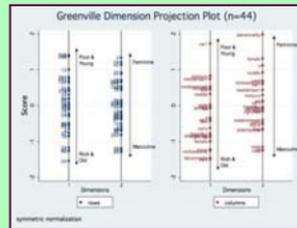


Figure 2: Dimension plot for the Greenville burials. Dimension 1 measures wealth and age while Dimension 2 measures gender.

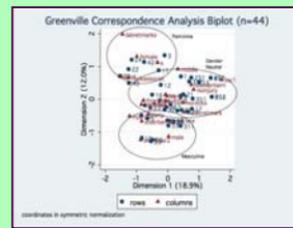


Figure 3: Biplot for Greenville correspondence analysis. Burial goods and treatments associated with genders are differentiated.

ANALYSIS

Upon running the complete data set, most of the data clustered around 0, indicating its variability was not measured by either dimension. The analysis was apparently measuring only variables that had one or two instances, like basket burials or burials associated with dogs. Although interesting, this does not reveal anything about greater patterning within the site, and so all variables with fewer than five instances and variables that were deemed to measure unimportant phenomenon, such as the category for unidentified sex, were removed. In addition to this, burials 43 to 57 were removed because they were all severely disturbed by bulldozer action and so can add little to a discussion of directionality or association with rocks among other things. Of the categories listed in the data, male, female, aged 0-17, 18-30, 30-50, 50+ period Early, Middle, Late, Box burial, Southeast layout, South, Southwest, right flexed, left flexed, front flexed, labret marks, no labret marks, elderberry seeds present, no elderberry seeds, rock associations, and no rock associations were kept for the analysis. Although inertia was low, this only indicates there is more variability present than is seen in two dimensions alone (Table 1).

Gender, wealth, age, and time period all seem to be acting on the dimensions (Figure 2). In Dimension 1, the categories that rank highly on the positive end of the dimension include being between 0 and 17 years old (var1), having no elderberry seed association, and having no severe injuries. The categories that rank highly on the negative end of the dimension include labret wear, females, rock association, injury, being over 60 years old (var4), elderberry seed association, and being flexed. When looking at how the burials score on Dimension 1, it becomes clear that burials poor in goods score high positive while burials rich in goods score high negative. Dimension 1, then, seems to be a continuous measurement for burial wealth. This is supported by the dimension plot for the column categories. No elderberry seed association and no labret marks rank highly on the positive end of the spectrum while injury, rock association, and labret marks rank highly on the negative end of the graph.

Not only do the dimensions measure specific aspects of these burials, but also the biplot of the dimensions reveals a number of clusters that contain interesting similarities (Figure 3). The most obvious clusterings involve male and female burials. Female burials, including burials 3, 22, 24, and 42, are most associated with labret marks and south facing burials. Male burials, including burials 19, 20, and 26, are associated with ages 18 to 30 and southeast facing burials. This means that the majority of burials between 18 and 30 are male, which is true. The directionality associated with these sexes is interesting. Southwest burials, which were most common, fall near 0 for both dimensions, so it seems to be a gender-neutral direction, whereas due south is feminine and southeast is masculine. Additionally, it is not surprising that labret wear is associated only with females as it was found only on female remains (Cybulski 1992).

CONCLUSIONS

As discussed above, Dimension 1 defines the relative wealth and age of the graves while Dimension 2 defines gender. Two interesting aspects of this analysis that are supported by Cybulski's (1992) analysis as well as other data involve the use and meaning of labrets and the association of males with violent injury and war. Cybulski (1992) points out that labret marks are associated only with females and are a symbol of status. This is supported by ethnographic data that explain "inserting a labret was part of the rite of passage in the life cycle of every non-slave woman" (Moss 1999:31). Not only this, but larger, more intricate labrets that were more likely to leave marks on teeth "were worn exclusively by elite women" (32). Although Cybulski (1992) was able to identify the labret as important to status and worn only by women without using statistical analysis, seeing how heavily labrets rate as feminine and as a high status grave good supports the validity of this analysis. Interestingly, too, Cybulski (1992) believed rock associations were a male feature in the burials. When the correspondence analysis is examined, however, it seems clear that rock associations rank as feminine.

Cybulski (1992) notes that a number of males show evidence of interpersonal violence likely from engaging in warfare. If warfare is an exclusive activity of males as Cybulski suggests, then violence should rank as a masculine activity, which it does. Again, like with labrets for females, the correspondence analysis results support Cybulski's conclusions, and this adds validity to the analysis results.

In addition to gender and wealth, achieved status can be seen in these results (Figure 2.3). As age increases, so does wealth of the grave, which indicates one must gain status throughout a lifetime rather than simply be born to it (Ames 2001). This is interesting since by the time of the Greenville burials, it is generally believed ascribed status had come into play. The results of this analysis suggest status on the Northwest Coast was more fluid than is generally believed.

Cybulski (1992) further notes that at Prince Rupert Harbor, many of the adult women were slaves and so were not treated to high-status burials, which seems to be supported by more identified male than female remains at Greenville in what Cybulski identifies as a high-status burial ground. If the burials at Greenville all tended to be wealthy in elderberries and box burials, for instance, which Cybulski (1992) identifies as high status items, then this would be a perfectly logical argument for why there is such a difference between the number of male and female burials at Greenville.

This, however, is not the case. Regardless of gender, there is great variability in grave wealth, and 23 burials rate feminine while 21 rate masculine, as can be seen in Figure 2. Although there is a discrepancy in sex based on physical identification, the correspondence analysis results, which rate burials with unknown sex, indicates that perhaps the sex ratio at the site is almost equal. Cybulski's (1992) assumption that these burials represented high status individuals then, is perhaps incorrect, and the reason there is a discrepancy between the number of male and female burials, namely slavery, does not hold. The seemingly even distribution by gender and differences in wealth suggest this was a common burial ground rather than elite.

REFERENCES

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Table 1: Correspondence Analysis Results

Burials	Treatments	Dim.
44	24	2
Chi-Squa.	p	Inertia Exp.
644.84	<0.001	31%