

Predicting Similarity in Material Culture Among New Guinea Villages From Propinquity and Language: A Log-Linear Approach

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This paper fits a specific log-linear model to a contingency table containing the frequencies of 47 artifact types across 31 village sites on the North Coast of New Guinea. The model provides a precise and elegant answer to the questions raised by Welsch, et al. (1992:568), namely, how much of the "variability in the inventories" is accounted for by distance and how much by language. We measure the total amount of variability in the contingency table with a model of quasi-independence, i.e., the expected frequencies based on column and row totals. We then ask what proportion of this variability can be accounted for by: (1) the scaled distances, (2) the scaled languages, and (3) the scaled distances and languages taken together. The scale values for distance and language come from a previous analysis by Moore and Romney (1994). Results show that distance and language account for just over a quarter of the variability taken separately, whereas taken together they account for an additional 10 percent. The results support the previous analysis of Moore and Romney (1994) that finds both distance and language to be related to artifact type distribution and contradict the notion of Welsch, et al. (1992) that language is unrelated to artifact type distribution.