An Analysis of the Risk Hypothesis and its Application to Hunter-Gatherer Toolkits Using an Australian Dataset

Emma Rehn

BA(Hons), College of Arts, Society and Education, James Cook University, November 2014

Environmental risk is increasingly being cited as an explanation for human behaviour. These explanations are frequently supported by correlating technological data and risk proxies, such as latitude, effective temperature and measures of mean rainfall. The risk hypothesis has three primary predictions for toolkits, which reflect the influence of risk: (1) toolkits in higher risk areas will have a greater number of tool types than toolkits in lower risk areas; (2) toolkits in higher risk areas will feature tools with a greater number of component parts than toolkits in lower risk areas; and (3) toolkits in higher risk areas will have a greater average number of component parts per tool than toolkits in lower risk areas.

In this thesis, I review the assumptions and implications of risk theory before testing the predictions of risk theory against the toolkits of five Australian hunter-gatherer groups. Case studies were selected on the basis of availability of data, and were chosen to represent a range of environmental settings. Land areas for each group were determined using Horton's (1994) Aboriginal language map. Toolkit data were collected from ethnographic and museum sources and analysed using Oswalt's (1976) techno-unit method. Climatic data were collected from the Bureau of Meteorology and Binford (2001) was used to model risk proxy variables. Toolkit data and climatic variables were correlated and the resulting correlations were analysed. The strongest correlations were found between toolkit variables and effective temperature, mean rainfall for the wettest month, average monthly rainfall and Annual Rainfall Variability Zone. Of the technological variables, the average number of technounits consistently showed the highest correlations. Overall, the data supported the general trends predicted by the risk hypothesis.

References

Binford, L.R. 2001 *Constructing Frames of Reference: An Analytical Method for Archaeological Theory Building using Hunter-Gatherer and Environmental Data Sets*. Berkeley: University of California Press.

Horton, D. 1994 *The Encyclopaedia of Aboriginal Australia: Aboriginal and Torres Strait Islander History, Society and Culture.* Canberra: Aboriginal Studies Press for the Australian Institute of Aboriginal and Torres Strait Islander Studies.

Oswalt, W.H. 1976 *An Anthropological Analysis of Food-Getting Technology*. New York: John Wiley & Sons.