

Constructing kinship. A network study of material and biological ties at Çatalhöyük

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Çatalhöyük is a dense, long-lived (7100- 5950 BC) Neolithic tell site located in Central Anatolia. The site is composed of layers of overlapping mudbrick houses with no evidence for communal structures; the social arrangement of the site remains poorly understood. Previous research that made use of similarity networks highlighted a flexible and resilient social arrangement that mixes very localized ties between neighbouring buildings with cross cutting relations across far away houses.

This new study integrates material culture and archaeogenomic data within a network approach and explores their complex relationship. By combining socio-material networks created using similarities of material culture across buildings and networks of biological relationships between individuals buried underneath the floor of houses, we aim to further investigate the nature of social groups and kinship structure at the site.

We establish a building-building network, connecting buildings if they share a statistically significant amount of material culture, using network backbone. Then, we calculate the dispersion of kinship groups over this network via network variance.

Our preliminary findings – pending confirmation – suggest that people who share genetic ties indeed concentrate in the material culture network, or – in other words – that sharing material culture is a significant indicator that social ties are present. This is true even when we control for confounders, for instance the fact that buildings close in space and/or in time are expected to share material culture and genetic ties.

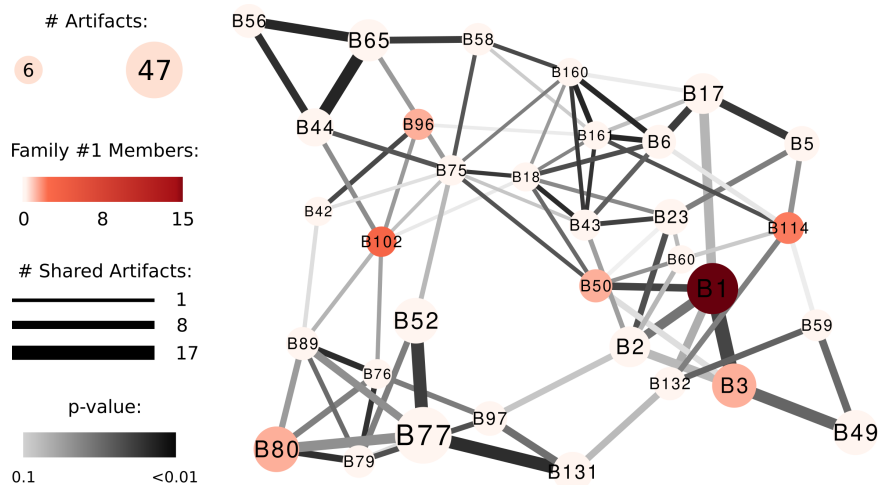


Figure 1: The significant building relationships according to material culture data. Node size is the number of artifacts recovered per building, node color is the number of family members from the largest 3rd degree family buried in the building, edge size is the number of shared artifacts between buildings, edge color is the level of statistical significance.