

Tree-based and network analysis for the characterization of marine and terrestrial hunter-gatherer societies interactions in Fuego-Patagonia

Virginia Ahedo (Institución Milá y Fontanals – CSIC), Nélica Pal (CONICET-Centro Austral de Investigaciones Científicas), Lucas Turnes (CONICET-Centro Austral de Investigaciones Científicas), Myrian Álvarez (CONICET-Centro Austral de Investigaciones Científicas), Adriana Lasa (CONICET-Centro Austral de Investigaciones Científicas), Ivan Briz i Godino (CONICET-Centro Austral de Investigaciones Científicas, ICSE-UNTDF, U. of York), José Ignacio Santos (Universidad de Burgos), José Manuel Galán (Universidad de Burgos), Jorge Caro (Institución Milá y Fontanals – CSIC), Débora Zurro (Institución Milá y Fontanals – CSIC)

Social identity and social interaction between different social groups are paramount research topics in hunter-gatherer archaeology: many different methodological proposals tried to identify what elements of the archaeological record can be considered as relevant items for this purpose.

The technology developed by human societies can be seen as a key element to explore these topics. For that reason, we study the bone and lithic artefacts of pedestrian vs. nautical hunter-gatherer societies and their spatial and temporal distribution to identify frontiers and the areas of social interaction between both kinds of societies.

To accomplish this proposal, we focused on an outstanding geographical context: Fuego-Magallania is the southernmost portion of South America, involving the final portion of continental South America and the Fuegian Archipelago, until Cape Horn (55° 58'48''S). This area, including plateaus, the Andes, islands and channels offer an exceptional arena to explore the social interaction between H-G societies with and without nautical technology.

In our analysis, we use a database of 258 locations and more than 200 types of items. To formalize and gain insights about possible social interactions we combine two approaches: (i) we conceive the information as a classification problem, this process allows to identify the variable importance of each type of items and draw the cases in which the presence/absence of some sets of technologies can indicate technological interaction. We complement this supervised approach with the (ii) technological map of interactions. Clustering techniques based on overlapping community detection algorithms confirm the areas of social interaction between both kinds of societies.