

New evidence suggests Neanderthals organized their living spaces

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Archeologists are shown excavating Neanderthal levels at Riparo Bombrini, Northwest Italy. Credit: Fabio Negrino

Scientists have found that Neanderthals organized their living spaces in ways that would be familiar to modern humans, a discovery that once again shows similarities between these two close cousins.

The findings, published in the latest edition of the *Canadian Journal of Archaeology*, indicate that Neanderthals butchered animals, made tools and gathered round the fire in different parts of their shelters.

"There has been this idea that Neanderthals did not have an organized use of space, something that has always been attributed to humans," said Julien Riel-Salvatore, assistant professor of anthropology at the University of Colorado Denver and lead author of the study. "But we found that Neanderthals did not just throw their stuff everywhere but in fact were organized and purposeful when it came to domestic space."

The findings are based on excavations at Riparo Bombrini, a collapsed rock shelter in northwest Italy where both Neanderthals and, later, [early humans](#) lived for thousands of years. This study focused on the Neanderthal levels while future research will examine the more recent modern human levels at the site. The goal is to compare how the two groups organized their space.

The site comprises three levels assigned to Neanderthals. Scientists found that Neanderthals divided the cave into different areas for different activities. The top level was used as a task site – likely a hunting stand - where they could kill and prepare game. The middle level was a long-term base camp and the bottom level was a shorter term residential base camp.

Riel-Salvatore and his team found a high frequency of animal remains in the rear of the top level, indicating that the area was likely used for butchering game. They also found evidence of ochre use in the back of the shelter.

"We found some ochre throughout the sequence but we are not sure what it was used for," Riel-Salvatore said. "Neanderthals could have used it for tanning hides, for gluing, as an antiseptic or even for symbolic purposes – we really can't tell at this point."

In the middle level, which has the densest traces of human occupation, artifacts were distributed differently. Animal bones were concentrated at the front rather than the rear of the cave. This was also true of the stone tools, or lithics. A hearth was in back of the cave about half a meter to a meter from the wall. It would have allowed warmth from the fire to circulate among the living area.

"When you make [stone tools](#) there is a lot of debris that you don't want in high traffic areas or you risk injuring yourself," Riel-Salvatore said. "There are clearly fewer stone artifacts in the back of the shelter near the hearth."

The bottom level, thought to represent a short-term [base camp](#), is the least well known because it was exposed only over a very small area. More stone artifacts were found immediately inside the shelter's mouth, suggesting tool production may have occurred inside the part of the site where sunlight was available. Some shellfish fragments also suggest that Neanderthals exploited the sea for food; like ochre, these are found in all the levels.

The discoveries are the latest in continuing research by Riel-Salvatore showing that Neanderthals were far more advanced than originally thought.

In an earlier study, he found that Neanderthals were highly innovative, creating bone tools, ornaments and projectile points. He also co-authored a paper demonstrating that interbreeding between Neanderthals and humans may have led to the ultimate demise of the outnumbered

hominins. Still, Neanderthal genes make up between one and four percent of today's human genome, especially among Europeans.

"This is ongoing work, but the big picture in this study is that we have one more example that Neanderthals used some kind of logic for organizing their living sites," Riel-Salvatore said. "This is still more evidence that they were more sophisticated than many have given them credit for. If we are going to identify modern human behavior on the basis of organized spatial patterns, then you have to extend it to Neanderthals as well."

More information: Riel-Salvatore, J., I.C. Ludeke, F. Negrino, & B.M. Holt. 2013. A spatial analysis of the Late Mousterian levels of Riparo Bombrini (Balzi Rossi, Italy). *Canadian Journal of Archaeology* 37(1): 70-92.

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