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First Neanderthal rock engraving found in Gibraltar

The first example of a rock engraving attributed to Neanderthals has been discovered in Gorham's Cave, Gibraltar, by an international team¹ bringing together prehistorians from the French Laboratory 'De la Préhistoire à l'Actuel: Culture, Environnement et Anthropologie' (PACEA - CNRS/Université Bordeaux/Ministère de la Culture et de la Communication), and researchers from the UK and Spain. Dated at over 39 000 years old, it consists of a deeply impressed cross-hatching carved into rock. Its analysis calls into question the view that the production of representational and abstract depictions on cave walls was a cultural innovation introduced into Europe by modern humans. On the contrary, the findings, published in *PNAS* on September 1, support the hypothesis that Neanderthals had a symbolic material culture.

The production of representational and abstract depictions on cave walls is seen as a key stage in the development of human cultures. Until now, this cultural innovation was considered to be a characteristic feature of modern humans, who colonized Europe around 40 000 years ago. It has also frequently been used to suggest that there were marked cognitive differences between modern humans and the Neanderthals who preceded them, and who did not express themselves in this way. The recent discovery in Gorham's Cave changes the picture.

It consists of an abstract engraving in the form of a deeply impressed cross-hatching carved into the bedrock at the back of the cave. At the time it was identified it was covered by a layer of sediment shown by radiocarbon dating to be 39 000 years old. Since the engraving lies beneath this layer it is therefore older. This dating, together with the presence of Mousterian² tools characteristic of Neanderthals in the sediments covering the engraving, shows that it was made by Neanderthals, who still populated the south of the Iberian peninsula at that time.

(1) *The research was supported by an ERC grant.*

(2) *Mousterian culture was produced in Europe by Neanderthals during the Middle Paleolithic (300 000 to 39 000 years ago).*

(3) *Pointed tool made of stone.*



Researchers at the PACEA Laboratory (CNRS/Université de Bordeaux/Ministère de la Culture et de la Communication) undertook a microscopic analysis of the engraving, produced a 3D reconstruction of it, and carried out an experimental study, which demonstrated its human origin. The work also showed that the engraved lines are not the result of utilitarian activity, such as the cutting of meat or skins, but rather that of repeatedly and intentionally passing a robust pointed lithic tool³ into the rock to carve deep grooves. The lines were skilfully carved, and the researchers calculated that between 188 and 317 strokes of the engraving tool were necessary to achieve this result.

The discovery supports the view that graphic expression was not exclusive to modern humans, and that some Neanderthal cultures produced abstract engravings, using these to mark their living space.



*Entrance to Gorham's Cave, Gibraltar
Photograph and analysis of the engraving
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A video of the 3D reconstruction of the engraving is available for download from 2 September 2014 (for 2 weeks) at: <https://services.aquitaine.cnrs.fr/filez/uyykkifegag>

Reference

A rock engraving made by Neanderthals in Gibraltar; Rodríguez-Vidal J., d'Errico F., Giles Pacheco F., Blasco R., Rosell J., Jennings J.R., Queffelec A., Finlayson G., Darren A. Fa., Gutiérrez López J.M., Carrión J.S., Negro J.J., Finlayson S., Cáceres L.M., Bernal M.A., Fernández Jiménez S., Finlayson C.; *PNAS*; 1 September 2014.

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