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## Dating cultural change from inhumation to cremation of the dead in the Bronze Age



The tradition of burning the dead and placing their remains and those of the funeral pyre in ceramic urns spread in the second millennium BC throughout Europe, from the Carpathians and the Danube valley to the northeast of the Iberian Peninsula. This study analyzed archaeological funeral remains in Switzerland and Catalonia to probabilistically date the expansion of this practice. The results show that it was introduced in Switzerland between the sixteenth and seventeenth centuries BC, and 600 years later in Catalonia, but it did not completely displace the older practice of burying the dead.

Urn with cremated bones from the cemetery of Pi de la Lliura (Girona, Catalonia). Subirà, M. E. 2005. *Anthropological study of the remains from the 2003 excavation campaign in Pi de la Lliura (Vidreres)*. Report for the Archaeology Museum of Catalonia, Girona (unpublished)  
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Since the first works of Pere Bosch Gimpera, father of Catalan archaeology, at the beginning of the 20<sup>th</sup> century, one of the key topics of the protohistoric debate focusing on the northeast of the Iberian Peninsula has been the study of the so-called "Urnfield culture", characterized by the spread on a European scale of the tradition of burning the dead and placing skeletal remains,

pyre charcoal and ashes in ceramic urns. This funerary rite is attested in the last phases of the Bronze Age in a large territory, from the Carpathians and the Danube valley to the northeast of the Iberian Peninsula. This process led to a phenomenon of cultural change: some members of local communities, characterized by the practice of burying their dead in pits, frequently covered by a mound of stones and earth, began to adopt the new funerary practice.

The study, published in *World Archaeology*, aims to shed light on the process of transition from inhumation to cremation through an innovative approach based on the statistical analysis of funerary contexts between 1800 and 800 BC in the territories corresponding to the current Catalan region and Switzerland. In particular, the radiocarbon-dated archaeological contexts have been used as a starting point for the analysis. Nowadays, radiocarbon ( $^{14}\text{C}$ ) dating has become the most widespread technique to date organic materials in order to clarify the age of archaeological remains and as a consequence the human and natural processes that have generated the archaeological deposit.



Figure 1: On the left, Early Bronze Age inhumation grave from the cemetery of Spiez-Einigen (Bern, Switzerland). On the right, simple cremation grave, cemetery of Pi de la Lliura (Girona, Catalonia).

The analyzed dataset is composed of 40  $^{14}\text{C}$  dates originating from 13 funerary contexts located in Switzerland (19 samples from cremation graves, 20 from inhumation graves, and one from a grave with both rites attested) and 47  $^{14}\text{C}$  dates from 25 archaeological sites in Catalonia (17 dates are associated with 7 cremation graves, while 30 samples originate from inhumation graves).

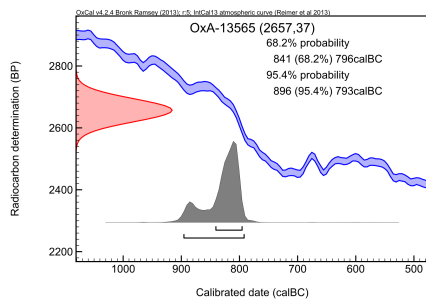


Figura 2: Radiocarbon date from a sample of charcoal originating from a burial mound at the cemetery of Pedrós (Lleida, Catalonia).

Thanks to the Bayesian analysis of this important dataset and after having checked the reliability of the samples used, it has been possible to model probabilistically this historical phenomenon. The results obtained indicate that the introduction of cremation in the second millennium BC took place first in the area of Switzerland between 1639 and 1535 BC for a  $2\sigma$  probability and in the time span 1614-1560 BC for a  $1\sigma$  probability. With a delay of about 600 years, the new funerary ritual was also adopted by the communities established in Catalonia, in which region the transition from cremation to inhumation has been dated between 1052 and 932 BC for the  $2\sigma$  and between 1019 and 958 BC for the  $1\sigma$ . It is relevant to observe that in both areas the adoption of cremation did not imply the

abandonment of the previous rite, but only a reduction in the number.

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**References**

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