

## Abstract

Archaeologists have excavated thousands of prehistoric graves containing burnt bones and personal equipment. So far we had only limited knowledge of *where* and *how* the dead were cremated, *who* performed the action and *what* was left when the pyre was burnt down. In this study the preconditions of the cremation process, its course and residues, are analyzed on the basis of relics from prehistoric cremation graves and presumed pyre sites including data from disciplines such as archaeo-osteology, ethnography and pyrotechnology. Furthermore, data and observations from a number of cremation experiments are included, some of which were carried out in connection with the project. The experiments have documented that the incineration of a corpse of an adult takes 3-7 hours with the use of less than 2 m<sup>3</sup> of wood; the cremation process is not *complicated* and does not require the participation of *technical specialists*. However, *ritual specialists* might have helped staging the cremation process as a multisensual and *complex action*. When the pyre has burnt down it leaves a thin layer that is only slightly larger than the pyre construction, and a complete sorting of the residues can be accomplished in 1-2 hours.

The experimental pyre sites have a number of characteristics that can be identified in structures from prehistoric cemeteries – and only here. Judging from these structures the size of the prehistoric pyre constructions varied as a reflection of social status. I conclude that the products of cremation derive from the interaction of the three conditions necessary for incineration to take place – i.e. *time, temperature* and *oxygen* on the one hand, vs. *human intervention, the dynamics of the pyre* as well as *the products and process expected by spectators* on the other.

Generally prehistoric cremation graves contain only a small part of the cremated skeleton of a human and only fragments of the equipment belonging to the cremated person. The experiments have documented that this is not a result of the impact of the fire. In rituals following the cremation process the material was handled including destruction and division. These rituals would probably imply that burnt bones and objects were deposited in several places or reused in different contexts.