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## **EXPLORING THE NEURAL PLASTICITY OF EARLY POTTERS: A MULTIDISCIPLINARY INVESTIGATION**

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This contribution presents the preliminary results of a study exploring the neural plasticity of early potters, combining experimental archaeology, cognitive neuroscience, and behavioural techniques. The development and transformation of ceramic technology during the Neolithic marked a profound shift, on the one hand, in the economy, social dynamics, and cultural practices, and, on the other hand, it likely demanded new cognitive and motor skills necessary to manage the constraints of a new raw material, such as clay. Drawing on cognitive approaches and the integration of archaeological methods with neuroscience techniques, our research explores the neuro-cultural mechanisms underlying ancient craft behaviours. Through a pilot study involving intensive training in Neolithic pottery-making techniques, participants' neural and behavioural changes were measured alongside their material production. Employing TMS-EEG co-registration, we examined neural indices, and analysed shape variations in handicrafts longitudinally, before and after training.

Our findings suggest changes in the primary motor cortex and enhanced symmetry and consistency in vessel and coil productions after intensive pottery training. This multidisciplinary approach contributes to shed light on mechanisms of material culture variation and human cognition and is promising for understanding technological evolution and its impact on past societies across different historical periods.

### **Keywords**

Neuroarchaeology, Neolithic, Skill, Material Culture, Ceramic Technology

### **Note/comment**