

## Social aspects of Neolithic technology of firing pottery in bonfires

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### Abstract

Firing pottery was one of the most complicated Neolithic technologies since it requires certain natural conditions to be met and the existence of an organized group that could successfully make firing. Such group/team consists of a person that can be denoted foreman of firing and assistants. A foreman of firing maintained stable and active fire and managed the process of firing in general. The main task of the assistants was the preparation of brushwood. Firing of a large vessel required many efforts, so there could be two or three teams, which replacing each other continuously maintained the fire. The Neolithic technology of firing evidently was built up with many restrictions and rituals which were aimed to avoid distractions/bustle. Foremen of firing could predict the dry weather, so they played the roles somehow like those of shamans. Foremen of firing could be informal leaders of their local groups.

**Keywords:** Neolithic technology of firing pottery; Neolithic society; experimental archaeology

### 1. Introduction

In the Neolithic period all pottery was fired in open bonfires. According to our experiments a successful firing the following conditions should be met: 1) dry and relatively warm weather, 2) a dry place for a bonfire, 3) a sufficient amount of properly prepared firewood (small firewood is better than large), 4) before the firing the place where vessels are going to be fired should be warmed up well, and the vessels also should be warmed up well, 5) when the vessels are put upon the hot coals they should be covered by well-prepared brushwood as soon as possible, 6) after the vessels are covered by sufficient amount of brushwood the fire should not be fanned artificially but should let to burn naturally, 7) should be maintained stable fire and vessels should be constantly covered from the open air by brushwood/firewood during the whole firing, 8) and an important point of successful firing is the absence of any distractions (for more details see Akulov, Efimova 2019).

In general, it is quite clear that the technology of producing pottery was one of the rather complicated Neolithic technologies and due to this fact probably was built up with many restrictions and rituals. The Neolithic technology of firing pottery is, for instance, much more complicated than that of producing a schist ax: manufacturing of a stone ax doesn't require dry weather and special long preparations, it is possible to say that producing stone tools was a fairly simple matter: almost everybody having the appropriate material at hand, could in a reasonably foreseeable time make as many axes as it was required. While the Neolithic technology of firing of pottery requires not only natural conditions to be met but the existence of a specially organized group that can successfully make firing.

Archaeologists who study different technologies of pottery usually like to write about the chemical composition of clay, about different types of dung that were added to the clay, about different temperature regimes of firing, but for some unknown reason don't write anything

about social aspects of firing technology while it is pretty obvious that the existence of technology of firing necessarily presupposes the existence of certain social structures.

I suppose that experimental archaeology should help us to understand the structure of ancient societies, but not just the technical aspects of manufacturing certain artifacts.

## **2. Negative factors disturbing a successful firing and their influence on social aspects of firing**

In 2019 – 2021 I have made a series of experimental firings of pots in bonfires and I can say that the main negative factors that can disturb successful firing are the following: humidity, temperature jumps (caused by windy and/or cold weather), and bustle.

To avoid all negative factors at once firings should be performed in the summer, but in winter settlements, i.e.: in the depths of the forests, when most of the youth and children were in the summer fishery located on the seashore.

It is important to note that the whole life of Neolithic people was seasonally determined since gathering, fishing, and hunting are seasonal activities. In this paper I speak mainly about Neolithic people who lived in the territories of Saint Petersburg and Leningrad region whose life was closely connected with the Littorina sea<sup>1</sup> and Lake Ladoga and so they are conventionally named The People of Big Water or Paja Ul De'η in their hypothetical reconstructed language (see Akulov 2020a). People did not live permanently in the same place, there were seasonal settlements: winter and summer. The summer ones were located on the seashore, at the river mouths, where fishing was carried out, and the winter ones – in the depths of the forest, in the upper reaches of the rivers, where the autumn-winter hunting for forest animals was carried out. Sometimes summer and winter settlements were located at a considerable distance from each other.

## **3. Social structures that can be derived from the process of firing**

On the basis of my experiments I can state that even firing of small vessels (for instance about 3 cm diameter at the rim) is easier when there are assistants. And the firing of large vessels evidently requires a team of trained and motivated assistants.

In the center of the process of firing is the person that can be named foreman of firing. The main task of the foreman of firing is to be always near the bonfire, to maintain stable and active fire and during the whole firing, and to manage the bonfire in general. And also the foreman of firing manages the assistants.

A very important part of the process of firing is the preparation of firewood. The best firewood is small dry twigs/brushwood. The brushwood should be prepared: i.e.: it should be broken and collected in bunches, which are convenient to put in a fire.

To collect brushwood and to prepare it properly is the main task for assistants.

Firing a pretty large vessel (for instance about 1 m diameter at the rim) requires more effort than firing small vessels: it requires more brushwood and the fire should be maintained for about twenty-four hours or probably longer, so it is possible to suppose that in the case of firing a large vessel there could be several foremen of firing and two-three teams of assistants, which continuously maintain the fire for a day or even longer replacing each other.

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<sup>1</sup> Littorina Sea is the stage of Baltic sea existed in 5500 – 2000 BCE.

It looks highly possible that for the firing of a large vessel could gather together foremen of firing with their teams of assistants from different neighbor local groups<sup>2</sup>.

Also it is possible to suppose that in the case of the firing of a large vessel more than one foreman of fire could manage the process at the same time: one foreman manages the fire while another manages the work of assistants.

Firing pottery was an issue of vital importance for the Neolithic people, so as it was mentioned above the Neolithic technology of firing evidently was built up with many restrictions and rituals that were aimed to avoid distractions/bustle.

There are no trifles during firing, since one 'trifle' can ruin it. Firing is a pretty complicated process where should be taken into account many aspects, so being engaged in firing one should not even think about anything else except firing: extraneous thoughts distract and firing can go wrong. Not only the foreman of firing should be fully focused on the process of firing, but all participants of the firing should do the same. During firing all attention should be focused on firing only.

It is possible to state that rituals were inseparable parts of firing technology; rituals weren't just additions, but were integral parts of the technology, of the same weight as technical elements<sup>3</sup>. Now it isn't possible to say something definite about these rituals, but it is possible to state that there definitely was a system of rituals ambient the process of firing. And it is possible to suppose that these rituals could be performed mainly by the foreman of firing.

A foreman of firing not only managed the process of firing immediately, but also could precisely predict the favorable dry weather. And this forecast could be optionally used by the members of the group who weren't engaged in the firing. It isn't possible to state that in the society of the People of Big Water there were people who could be denoted with the term shaman<sup>4</sup>, but the foremen of firing definitely could pay the roles somehow like those of shamans.

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<sup>2</sup> It is possible to state that the main social structure of The People of Big Water was a local group, i.e.: a group connected by family ties and joint housekeeping. Each local group had a forest area, a river (or even rivers), as well as a part of the coast and water area of the Littorina Sea or Lake Ladoga.

<sup>3</sup> The idea that it is possible to distinguish rituals from technical elements evidently appears no earlier than Modern Time and would not be understood by the ancient people.

<sup>4</sup> The main problem is that the concept of shamanism is too closely related to Tungusic, Turkic, and Mongolian people. In the cultures of these ethnicities the institution of shamanism is well elaborated and has a number of vivid characteristic features, such as the election of a shaman by spirits, the special status of a shaman in society, characteristic external attributes of a shaman (special clothing, tambourine), communication between the shaman and the spirits in a state of special trance. Often this Siberian tradition is considered as a kind of standard of shamanism, however, it's incorrect to consider the Siberian tradition as a standard since it is only one of the existing traditions. Also it should be noted that traditions that travelers and ethnographers could observe in Siberia in the late 19th – first half of the 20th centuries are most likely quite different from what was practiced in the Neolithic period. The concept of shamanism is a certain kind of convention; it is a collective, umbrella term that covers very different, dissimilar practices in which only direct communication with spirits/deities is common. In general, it would be best to develop a new, more neutral term instead of the concept of shamanism, or at least to use the names that are used by the tradition itself to designate certain specific phenomena (Akulov 2020b: 12 – 14).

Although society as a whole was fairly egalitarian, the foremen of firing could probably be the informal leaders of their local groups, and they may have had access to better resources than the plain members of the group.

However, the existence of these foremen of firing is a sign of a very informal hierarchy yet, since the 'title' of foreman of firing was not inherited, the foreman of firing all the time showed in practice that he/she has knowledge and skills, and any member of the group with the necessary knowledge and skills could also become a foreman of firing: both men and women and not necessarily elderly people could be foremen of firing.

On the other hand, it looks pretty possible that this informal hierarchy/informal leadership could later become a base of formal hierarchy.

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