<https://www.cambridge.org/core/services/aop-cambridge-core/content/view/A1AA4FB20657599F859860D94CCD090E/S0003598X00047840a.pdf/role_of_cult_and_feasting_in_the_emergence_of_neolithic_communities_new_evidence_from_gobekli_tepe_southeastern_turkey.pdfResearch>

The role of cult and feasting in the emergence of Neolithic communities.

New evidence from Gobekli Tepe, south-eastern Turkey

Oliver Dietrich Manfred Heun2 Jens Notroff Klaus Schmidt &

Martin Zarnkow

… work required to build a monumental sanctuary like Gobekli Tepe, there had to be a means of bringing together groups from different areas and organising communal work. An answer on how this was achieved lies in the widespread evidence for extensive feasting, including the consumption of—most likely alcoholic—beverages, in the PPN archaeological record. Production and consumption of alcoholic beverages in the Near Eastern PPN Until recently it was widely accepted that beer brewing and wine production started with the civilisations of Mesopotamia and Egypt (Sherratt 1995: 24–26), documented by literary and iconographical evidence (Rollig 1970; Samuel 1996: 3–4). But in recent years, the starting point for the production of alcoholic beverages has been pushed ever further into the past. Not only could the residues of alcoholic beverages be pinned down chemically in early dynastic Egypt at Hierakonpolis (Maksoud et al. 1994) or the late Uruk period site of Godin Tepe, Iran (Michel et al 1993), and fifth-millennium BC Neolithic Greece (Valamoti et al. 2007), but wine has been detected even earlier in a Neolithic (mid sixth- millennium BC) jar from Hajji Firuz Tepe in northern Iran (McGovern et al 1996) and in stone bowls from the PPN burial site of Kortik Tepe, south-eastern Turkey (McGovern 2009). It can be safely stated that people’s first interest in wild grapes in western Asia was for alcohol production, evidence for domestication only following in the fourth millennium BC (Miller 2008: 944). From Gobekli Tepe now comes further chemical evidence this time for beer brewing, although it is not fully conclusive as yet. There are two principal approaches to the identification of alcoholic beverages in the archaeological record. The first includes looking for material evidence of brewing and has been followed by Dineley (2004) in her work on Neolithic beer making. She concentrates on suitable vessels and especially on so-called ‘malting floors’ that could have been used for germinating and drying grain. The second and more direct approach is the examination of organic residues adhering to pottery or stone vessels; for example, residues on two stone bowls from Kortik Tepe gave preliminary evidence of tartaric acid, hinting at the production of grape wine (McGovern 2009: 81). Chemical analysis was recently conducted also on a group of large limestone basins from Gobekli Tepe. Six barrel- and trough-like vessels have been found in PPNB contexts. Due to their size and capacities of up to 160 litres they are static, integral parts of particular rooms (Figure 11), but fragments of such vessels appear in all strata. Some of them show grayish-black residues adhering to the lower parts of the vessels. First results show probable evidence of oxalate for some samples, but the applied Feigl test was not sensitive enough to give reproducible results. Oxalate develops during the steeping, mashing and fermentation of cereals (barley, but also einkorn wheat and others, see Zarnkow et al. 2006: tab. 2) and can indicate the production of malt and beer. A complete scapula of an onager was found at the bottom of one vessel at Gobekli Tepe (Figure 11). A very similar find is known from Tell ‘Abr 3 in Syria, where five large limestone vessels stood on the floor of a structure described as a “communal building”, and a large bone lay within one of the vessels (Yartah 2005: 6). These bones could well have been used to stir up the contents of the vessels or to skim parts of it. At Jerf el Ahmar, Syria, three limestone basins of similarof similar size stood in a domestic building with different activity zones, yielding evidence for food processing in the form of grinding stones, saddle querns, plates and two charred seed cakes, containing primarily Brassica/Sinapis seeds (Willcox 2002: 55–56). This and the presence of a hearth encouraged the excavators to interpret the room as a kitchen area. Since the simplest brewing process would need, in addition to cereal processing equipment, only large containers for malting and mashing, this ‘kitchen’ could have produced beer as well. In Gobekli Tepe, the occurrence of beer making is not yet certain, but as signs of habitation are also absent, it is a possibility that not every step of production was carried out there. The grain may have been malted at nearby settlements and been brought there only on special occasions. Genetic analyses have shown that the domestication of single-grained einkorn and emmer wheat took place around the Karacadag (Heun et al. 1997; Luo et al. 2007) in close vicinity to Gobekli Tepe. It is an intriguing thought that brewing and the domestication of wheat might be interrelated. The idea of alcoholic beverages at such an early date is not new. Since the so-called ‘Braidwood Symposium’ in 1953 there has been ongoing discourse on this topic. Based on finds of several kinds of cereals at Qalat Jarmo in eastern Iraq and encouraged by a remark by paleobotanist Sauer, Braidwood questioned the common assumption that the appearance of domesticated cereals in the Near East was linked with bread making. He and Sauer asked whether the discovery of fermentation (barley for example ferments naturally under certain conditions: Katz & Maytag 1991: 26–27) might have operated as the initial step towards experimental selection and domestication of cereals (Braidwood et al.1953). However, the symposium was rather inconclusive, leaving no more than the awareness that the collection of wild grain as a basic food supply was not an option, due to small harvests resulting from its brittleness; early cereals were acknowledged as better suited to making gruel or beer than bread because of the glume adhering to the grain, although beer production was then seen as rather improbable. Katz and Voigt (1986) revisited this question stating that a diet containing beer was much more nourishing than one just based on gruel or bread. The discovery of fermentation and the use of beer in social and religious life could thus have led to the domestication of cereals. A similar approach was recently followed by Reichholf (2008). McGovern (2009) added the possibility of supply of alcohol through grape wine to the discussion. Seen from the point of view of nutritional science, there are some advantages in favour of beer. Its lack of oxygen and its low pH value make it less perishable than other cereal products (Back 1994: 16). There is an ongoing discussion about the question of whether most cereals would have been toxic before mankind adapted to them, adverse reactions to gluten proteins (coeliac disease) being the result of a missing evolutionary adaption (Greco1997). Malting and fermentation could have been a method to weaken these toxic effects as gluten is debranched, agglomerated and filtered to a high extent through malting and brewing. Interestingly, there seems to be a natural lack of toxicity in einkorn (Pizzuti et al. 2006). Whether one of these aspects was known to PPN people remains unknown, but prolonged observations could have led to that knowledge. Although none of the elements discussed above necessarily implies the production of alcoholic beverages, in itself, and chemical evidence is still sparse, all factors taken together support the idea that the possibility of creating alcoholic intoxicants was already known in the early PPN. The question remains why this should have happened just then and there.

Discussion and conclusion

At first sight early evidence for alcohol consumption may be surprising, but it fits well into a model that focuses on social incentives for the transition from hunting and gathering societies to food-producing early village-farming communities. Feasting has long been acknowledged as an integral part of Epipaleolithic (Munro & Grosman 2010) and early Neolithic societies. Evidence is present even at very early PPN sites like Hallan Cemi (with a main occupation

between 9660 and 9320 cal BC, comp. Benz 2011). Here the settlement of a small hunter community was arranged around a central free area with large amounts of animal bones and fire-cracked stones. As an interpretation of these findings, Rosenberg and Redding (2000: 44) have proposed reciprocal feasting as a means of strengthening a group’s coherence. Benz (2000, 2006: 440) argued for a similar role of feasting in the whole process of Neolithisation based on ethnographic analogies. She widens the argument by stating that one basis for the shift to agriculture and long-term storage must have been the loosening of reciprocity usually visible in hunter-gatherer societies. In her view, this was achieved through large feasts, for which food had to be stored.

On the other hand, Hayden (1990) has argued that resources becoming abundant during the climatic optimum following the Ice Age enabled competitive individuals to accumulate surplus in order to obtain powerful social positions through lavish feasts. The need to size stood in a domestic building with different activity zones, yielding evidence for food processing in the form of grinding stones, saddle querns, plates and two charred seed cakes, containing primarily Brassica/Sinapis seeds (Willcox 2002: 55–56). This and the presence of a hearth encouraged the excavators to interpret the room as a kitchen area. Since the simplest brewing process would need, in addition to cereal processing equipment, only large containers for malting and mashing, this ‘kitchen’ could have produced beer as well. In Gobekli Tepe, the occurrence of beer making is not yet certain, but as signs of habitation are also absent, it is a possibility that not every step of production was carried out there. The grain may have been malted at nearby settlements and been brought there only on special occasions. Genetic analyses have shown that the domestication of single-grained einkorn and emmer wheat took place around the Karacadag (Heun

et al. 1997; Luo et al. 2007) in close vicinity to Gobekli Tepe. It is an intriguing thought that brewing and the domestication of wheat might be interrelated.

The idea of alcoholic beverages at such an early date is not new. Since the so-called ‘Braidwood Symposium’ in 1953 there has been ongoing discourse on this topic. Based on finds of several kinds of cereals at Qalat Jarmo in eastern Iraq and encouraged by a remark by paleobotanist Sauer, Braidwood questioned the common assumption that the appearance of domesticated cereals in the Near East was linked with bread making. He and Sauer asked whether the discovery of fermentation (barley for example ferments naturally under certain conditions: Katz & Maytag 1991: 26–27) might have operated as the initial step towards

experimental selection and domestication of cereals (Braidwood

et al.1953). However, the symposium was rather inconclusive, leaving no more than the awareness that the collection of wild grain as a basic food supply was not an option, due to small harvests resulting from its brittleness; early cereals were acknowledged as better suited to making gruel or beer than bread because of the glume adhering to the grain, although beer production was then

seen as rather improbable. Katz and Voigt (1986) revisited this question stating that a diet containing beer was much more nourishing than one just based on gruel or bread. The discovery of fermentation and the use of beer in social and religious life could thus have led to the domestication of cereals. A similar approach was recently followed by Reichholf (2008). McGovern (2009) added the possibility of supply of alcohol through grape wine to the discussion.

Seen from the point of view of nutritional science, there are some advantages in favour

of beer. Its lack of oxygen and its low pH value make it less perishable than other cereal products (Back 1994: 16). There is an ongoing discussion about the question of whether most cereals would have been toxic before mankind adapted to them, adverse reactions togluten proteins (coeliac disease) being the result of a missing evolutionary adaption (Greco1997). Malting and fermentation could have been a method to weaken these toxic effects as gluten is debranched, agglomerated and filtered to a high extent through malting and brewing. Interestingly, there seems to be a natural lack of toxicity in einkorn (Pizzuti et al. 2006). Whether one of these aspects was known to PPN people remains unknown, but prolonged observations could have led to that knowledge.

Although none of the elements discussed above necessarily implies the production of

alcoholic beverages, and chemical evidence is still sparse, all factors taken together support the idea that the possibility of creating alcoholic intoxicants was already known in the early PPN. The question remains why this should have happened just then and there.