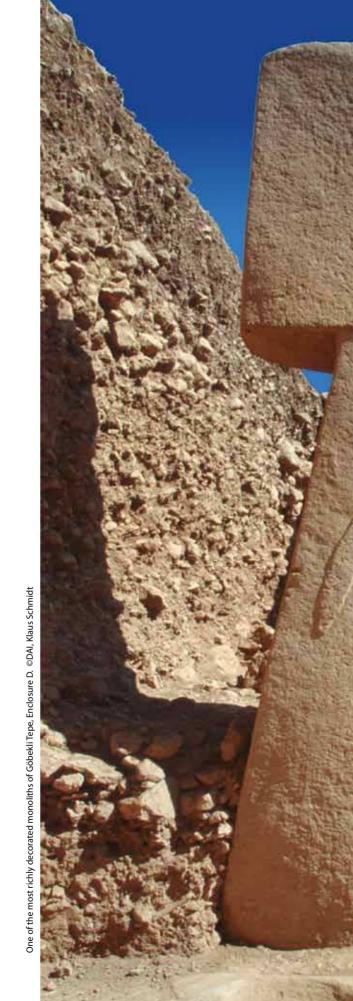
What modern lifestyles owe to Neolithic feasts

## **COBEKLİ TEPE**

The early mountain sanctuary at Göbekli Tepe and the onset of food-production

The upper parts of the central pillars of Enclosure D were visible for several years. Both have a stole and arms depicted in high relief. ©DAI, B. Steinhilber





## Jens NOTROFF, Oliver DIETRICH, Joris PETERS, Nadja PÖLLATH, Çiğdem KÖKSAL-SCHMIDT

"We remember Klaus Schmidt with love and longing, our teacher, bosom friend, comrade whom we appreciate for giving us the chance to recognize Göbekli Tepe and work in that extraordinary place all together"

bout 15 kilometres to the northeast of the modern metropolis of Şanlıurfa in southeastern Turkey, the tell of Göbekli Tepe is situated on the highest point of the barren Germus mountain range. The mound, with a height of 15 metres and an area of about 9 hectares, is completely man-made - covering what has to be considered the earliest yet known cult architecture constructed by man, raised by intentionally burying it about 10,000 years ago. These buildings represent monumental enclosures constructed by hunter-gatherer groups during the so-called Pre-Pottery Neolithic (or in short: PPN) period after the last Ice Age - architecture even predating the invention of pottery. Neolithic traces in form of huge amounts of flint flakes, chips, and tools were first recognized and described at Göbekli in the course of a combined survey by the Universities of Istanbul and Chicago in the 1960s, but the monumental architecture the mound was hiding remained unrecognized until its discovery in 1994 by Klaus Schmidt. Since then, annual excavation work has been conducted. During more than 20 years of field research - which is still ongoing - an impressive amount of

The mound, with a height of 15 metres and an area of about 9 hectares, is completely man-made – covering what has to be considered the earliest yet known cult architecture constructed by man, raised by intentionally burying it about 10,000 years ago. These buildings represent monumental enclosures constructed by hunter- gatherer groups during the so-called Pre-Pottery Neolithic (or in short: PPN) period after the last Ice Age – architecture even predating the invention of pottery. features and characteristics of this monumental site were unearthed, exhibiting a rich naturalistic and symbolic iconography, hinting at a social complexity and highly complex mythology hitherto quite unsuspected for such early times.

The oldest and most impressive of these structures - dating to the PPN A, i.e. the 10<sup>th</sup> millennium BC - are constituted by huge monolithic, distinctively T-shaped pillars with a height of 4 to 5.5 metres. These pillars, which form large 10 - 30 metre wide circular enclosures, are interconnected by walls and benches, and are always orientated towards a central pair of even larger pillars of the same shape. A younger layer, formed by smaller rectangular buildings, is superimposed on this monumental architecture in some parts of the mound. These approximately 3 x 4 metre large buildings are dated to the 9<sup>th</sup> millennium BC, i.e. the early and middle PPN B. They may be understood as minimized and somehow reduced variations of the older monumental enclosures, as they also produced T-shaped pillars in a number of cases - however, reduced significantly in number and size. Now, often only two small central pillars are present, the largest of these not exceeding a height of 2 metres.

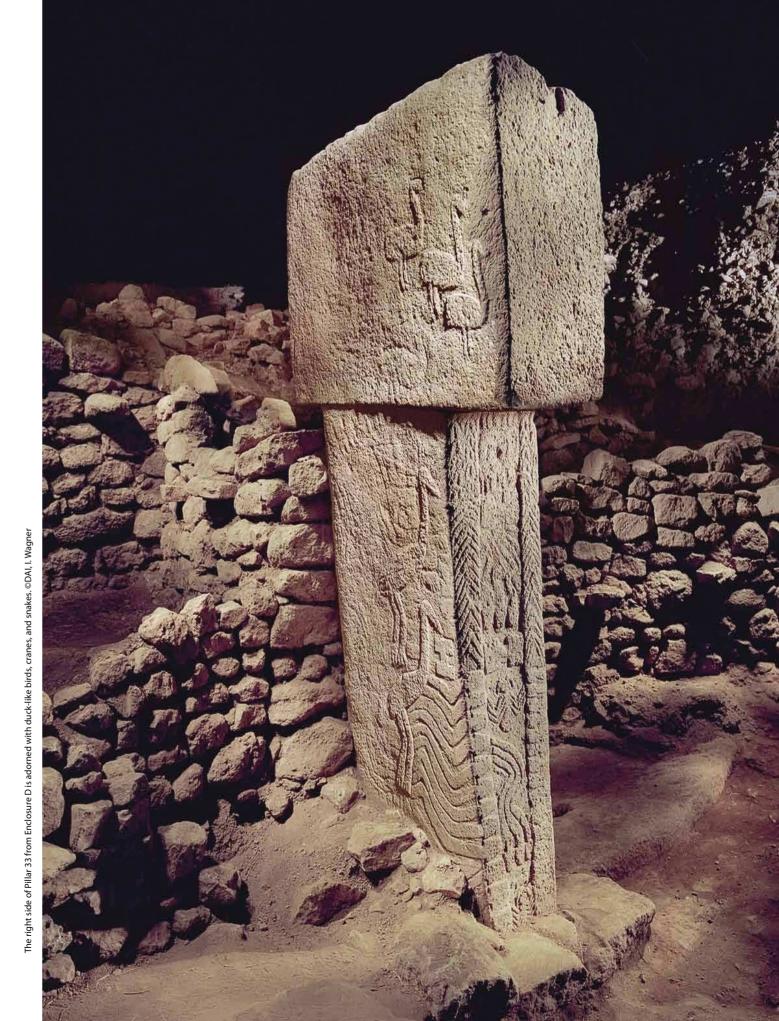
Without a doubt, the monumental circular PPN A enclosures are the outstanding feature of Göbekli Tepe's archaeology. Four of these structures were excavated in the so-called main excavation area in the mound's southern depression. They have been named Enclosures A, B, C, and D in order of their discovery. Interestingly, all enclosures were back-filled intentionally after a certain but thus far undetermined period of time – how long exactly we do not know as of yet – in a manner that almost reminds one of a burial.

Two of the big stone circles, Enclosures C and D, could be excavated to their ground level, in both cases formed by the artificially smoothed bedrock. Enclosure D is the so far the largest and best preserved structure. Two colossal central pillars measuring about 5.5 metres in height are founded in shallow pedestals carved out of the bedrock, one of them decorated with a frieze of ducks. In particu-

statue carved in a naturalistic manner, found at Nevalı Çori. Şanlıurfa Museum.

A human hear





Clearly visible are arms and hands on the pillars' shafts, with fingers pointing the middle of the waist. The depiction of belts and loincloths underlines the man-like notion of these pillars, which therefore could also be regarded as (pillar-)statues.

Three-dimensional reconstruction of Pillar 18, the eastern central pillar of Enclosure D. The depiction of arms and hands as well as attire in form of a belt and loincloth clearly underline the anthropomorphic appearance of the T-shaped pillars. ©DAI, T. Müller lar, these central pillars of Enclosure D are suited to demonstrating the anthropomorphic appearance of the T-shaped pillars in general: the oblong upper part of the "T" can be regarded as an abstract depiction of the human head, the narrow side representing the face. Clearly visible are arms and hands on the pillars' shafts, with fingers pointing to the middle of the waist. The depiction of belts and loincloths underlines the man-like notion of these pillars, which therefore could also be regarded as (pillar-)statues.

Aerial view of Göbekli Tepe with the main excavation area in the south-eastern depression (lower right) and excavations on the south-western hilltop (lower centre), on the north-western hilltop as well as north-western depression (left). ©DAI, E. Küçük The larger-than-life and highly abstracted manner of representation obviously is intentionally chosen, and not is owing to deficient craftsmanship, as finds like the so-called Urfa man clearly demonstrate. This oldest known, only slightly larger than life-sized, but positively naturalistic statue of a man was found during construction work in the area of the Pre-Pottery Neolithic site at Urfa-Yeni Yol. In contrast to the cubic faceless pillar-statues at Göbekli, the 'Urfa man' exhibits a face, his eyes be-



highly abstracted monumental anthropomorphic pillars depict entities – also spiritually – larger and hence more powerful than the naturalistic and more self-referential human sculptures. In the case of Enclosure D, the central pair of pillars is surrounded by a circle formed of 11 pillars (in the current state of excavation); most of these are decorated with depictions of animals like foxes, birds and snakes, as well as a wide range of other representations (boar, aurochs, gazelle, onager and larger carnivores).

ing depicted by segments of black obsidian sunken

into deep holes; a mouth, however, is missing. The

statue seems to be naked with the exception of a

V-shaped necklace. Legs are not depicted; below

the body there is a conical tab only, which allows

the statue to be set into the ground. From Göbekli Tepe there are also several approximately life-sized

human heads made of limestone and reminiscent

of the Urfa statue. They show a broken edge in the

neck region and therefore it seems quite probable

that they originally were part of larger statues as

well. Interestingly, some of these heads were found in the fill of the enclosures, placed there intention-

ally beneath the central pillars during the process

of backfilling. Since we are confronted with two

different modes of representation of humans, their

meanings could be different as well. Maybe the

Enclosure C stands out due to its several concentric and interleaved walls, into which the characteristic T-pillars are set. This peculiar structure's layout was obviously changed over time, as for instance an earlier entrance location was blocked by an apparently later added wall, and many pillars were repaired and rearranged. Like in Enclosure D, two pedestals for the central pillars were cut out of the bedrock. However, both central pillars of Enclosure C were destroyed in prehistoric times. A large pit was dug into the already backfilled enclosure, obviously precisely directed at the central pillars. The smashed pieces were found in the lower part of the pit, allowing at least a virtual reconstruction. The surrounding pillars of this enclosure present a number



The vast number of animal remains points to large-scale social events occurring along with the consumption of huge amounts of meat. Regular gatherings, collective activities, and reciprocal feasting have to be considered essential to hunter-gatherer communities, serving purposes of exchange and strengthening cohesion. At Göbekli Tepe in particular, the idea of large, ritualized feasts certainly gains importance in view of the clear intention to erect these monumental structures. Still, the question remains: when, how, and why did highly mobile hunter-gatherers start to be capable of creating such complex architecture at all, and in such a monumental scale in particular?

An animal relief unearthed from Göbekli Tepe. ©DAI, D. Johannes

of reliefs again, dominated by the depiction of wild boars, which add to a number of boar sculptures unearthed here as well.

Enclosure A, the first of these structures discovered, shows a more rectangular and thus rather unusual ground plan compared to the generally more circular or oval layout of the other PPN A enclosures at Göbekli Tepe. Since it is not completely excavated as of yet, the description of this enclosure must remain somehow preliminary – so does the interpretation of its divergent ground plan, which might be indicating already a transition towards the younger, rectangular building phase. Other characteristics, however, do match the general older layout. Of the T-shaped pillars surrounding the central pair, only four are excavated to date, but it can be expected that their number will increase with ongoing excavation work in that area. The imagery of Enclosure A's reliefs shows a prevalence of snakes.

A bit further to the northwest, Enclosure B is situated. A total of eight so far discovered pillars form in this case a positively circular structure. Reliefs are rare on these pillars, but it is this enclosure's floor which is remarkable in particular. Instead of the cut and smoothed bedrock discovered in Enclosure C and D, an artificial floor was created of burnt and then polished lime. These so-called Terrazzo floors would become a major characteristic of the later rectangular building phase. Furthermore, in front of one of the central pillars of Enclosure B, a stone bowl was set into the terrazzo floor, apparently constituting part of this structure's furnishings and the activities associated with it.

While Enclosures F (discovered at the southwestern hilltop) and G (also situated in the main excavation area) share typical characteristics of the older PPN A structures, their assignment to this group remains uncertain so far, as they are considerably smaller, and cannot be assigned to any layer. Enclosures H and I were unearthed in the northwestern depression of the mound. So far, only one of the central pillars - decorated with a big jumping cat and broken in antiquity - as well as five pillars of the surrounding ring have been discovered. Still under excavation, neighbouring Enclosure I is already clearly recognizable as circular in plan and layout; a more detailed description, however, has to remain subject to future investigation. On the western rock plateau, Enclosure E was identified as a completely cleared stone circle of which only the floor and two pedestals cut out of the bedrock remained visible.

Broadly contemporaneous domestic architecture of Upper Mesopotamia in the Pre-Pottery Neolithic is highly standardized and well-known from sites like Nevalı Çori (about 60 kilometres north of Göbekli Tepe) and Çayönü Tepesi (in the Upper





A humanhead statue carved in a in naturalistic manner, from Göbekli Tepe. Şanlıurfa Museum Tigris drainage), for instance. But none of these 'grill-plan' (PPN A to early PPN B), 'channelled' (early PPN B) or 'cobble paved' (middle PPN B) building types have been detected at Göbekli Tepe as of yet – and results of geophysical surveys are not indicating that such structures can be expected in future excavations. Interestingly, these sites and others, like Hallan Çemi in south-eastern Turkey, Mureybet, Jerf el Ahmar, Tell Abr' 3,

Dja'de, and Tell Qaramel in northern Syria, regularly include special purpose buildings or open courtyards laid out for communal and ritual purposes. The special buildings often have benches along the walls, and some also parallel the symbolic gatherings of Göbekli Tepe's enclosures. In the 'cult building' from Nevalı Çori for example, two central pillars are also surrounded by smaller ones 'looking' at them. In settlements, usually one of these buildings seems to have been in use at any given time.

The snake motifs and H symbol on the P30 monolith at Göbekli Tepe attract attention.



Comparing the examples of PPN domestic and 'special purpose' architecture, the enclosures excavated at Göbekli Tepe so far strictly seem to correspond to the latter. The site of Göbekli Tepe does not comprise of a settlement with one special building, but is constituted by lots of special buildings without any settlement traces. Furthermore, while PPN settlements usually are situated in favourable environmental positions with easy access to water and other resources, Göbekli Tepe in contrast is situated - topographically rather erratically - on the highest point of a mountain range far away from the nearest known springs. On the other hand, the site is widely visible as a natural landmark, physically dominating its surroundings. It thus seems to be the natural choice to establish a central meeting place for people from the nearby surroundings and the wider vicinity.

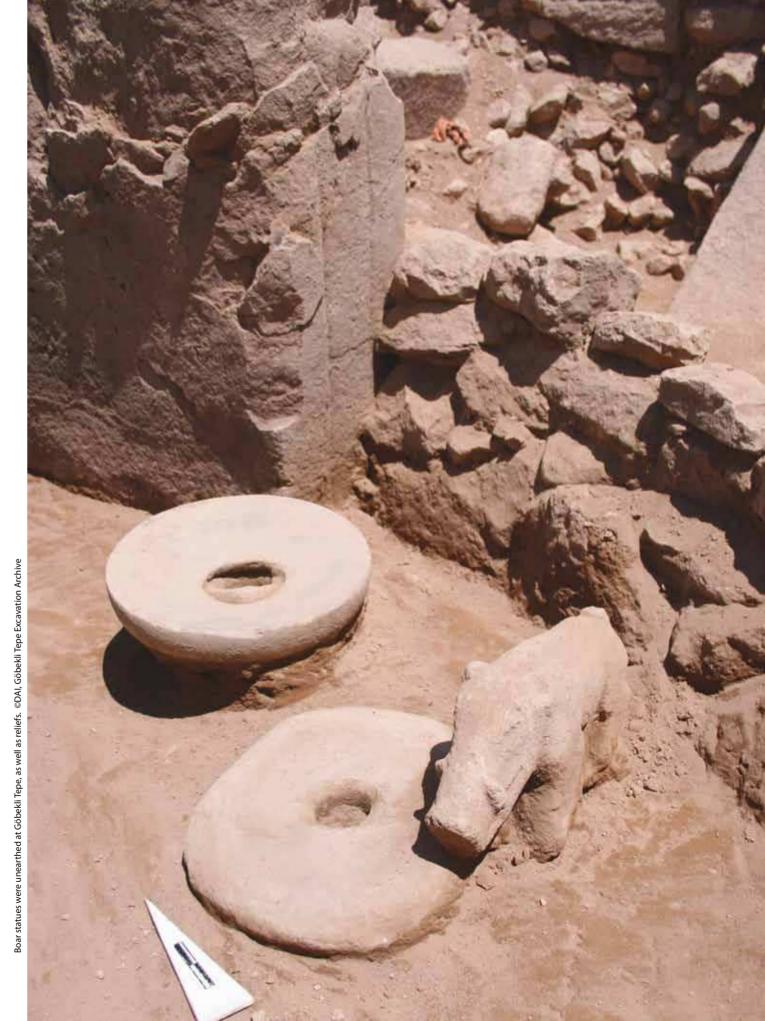
T-shaped pillars resembling the smaller type from Göbekli Tepe's later building phase were for the first time recorded at Nevalı Çori, but several other adjacent sites like Urfa-Yeni Yol, Sefer Tepe, Karahan, Hamzan Tepe, Taşlı Tepe, and Gusir Höyük are now known to also yield such monoliths; Gusir Höyük in the Tigris region considerably extends the distribution area of this kind of architecture. Sharing this distinctive feature, these places demonstrate a common cultural

> tradition among their residents. A similar spiritual concept seems to have linked these sites to each other, speaking in favour of a larger cultic community developing during the PPN in Upper Mesopotamia. This community is actually not characterized exclusively by T-shaped pillars, but shares a common set of symbols even beyond the sphere of the sites listed above. While naturalistic and abstract depictions do indeed find their most monumental manifestation on the T-shaped pillars as described, they are by no means lim-

ited to them, but also occur on rather functional objects like so-called shaft straighteners, on stone bowls and cups, as well as on small stone tablets which apparently do not have any other function than bearing these signs. Hallan Çemi, Mureybet, Jerf el Ahmar, Tell Abr' 3, Dja'de, and Tell Qaramel are some of the sites which mark an area of roughly 200 km around Göbekli as belonging to groups with the same cultural background. Although we may have failed to decode the proper meaning of these signs and symbols so far, we can safely assume that they were readable to the prehistoric society that produced them. During the PPN, for the first time signs and symbols may have served to preserve and pass on specific cultural knowledge. Interacting and exchanging not only such knowledge, but also certain goods and even marriage partners, can be considered vital for the subsistence and survival of the small semi-mobile hunter-gatherer groups of the PPN. Establishing







certain places suitable for large-scale gatherings seems a logical consequence – the enclosures of Göbekli Tepe may have marked such a social and cultic central place for the groups inhabiting and controlling the region.

A closer look at the massive amount of filling material covering Göbekli Tepe's enclosures may give us a hint about the character of the gatherings held here. The material used to backfill – actually to 'bury' these enclosures and thus creating the mound of Göbekli Tepe as it appears today – consists of limestone rubble, flint artefacts, fragments of stone vessels, other ground stone tools, and – in particular – large numbers of animal bones.

All these bones are the remains of wild animals that were hunted and brought to the mound to feed the people staying there. The hunters targeted a wide variety of animals native to the region includ-

The competition which becomes visible in this kind of feasting and the societal pressure it certainly would have brought along with it may have 'guided' early PPN hunter-gatherer groups into more sustainable ways of exploitation of food resources, rather than continuing traditional subsistence activities based on immediate returns. Surplus food, however, has to be accumulated, stored and – most importantly – redistributed. At this point, communities might have been confronted with the necessity of authority, promoting more charismatic individuals to positions of social power.



ing large game such as aurochs, red deer, onagers, and wild boar, as well as small game such as fox, hare, and wild fowl (chukar partridges, doves, and ducks). In terms of numbers, gazelles were the preferred game species, but in terms of meat provision, wild cattle (aurochs) ranked first, providing up to 50% of the meat consumed at the site. However, the nutrient content of meat was certainly not the only reason for hunting animals. The eminent role of black-feathered birds, such as ravens, crows, or jackdaws suggests that these carrion-eating birds were targeted for reasons other than their rather low nutritive value - reasons about which we can only speculate at the moment. Maybe their shining black plumage or their hoarse cawing voices had a special meaning in the spiritual world of the hunter and gatherer societies of Upper Mesopotamia? Be that as it may, the vast number of animal remains points to large-scale social events occurring along with the consumption of huge amounts of meat. Since regular gatherings, collective activities, and reciprocal feasting have to be considered essential to hunter-gatherer communities serving purposes of exchange and strengthening cohesion, their occurrence in the Upper Mesopotamian PPN should hardly surprise us and finds good proof with finds and features at Göbekli Tepe and other related sites hinting at collective activities. But at Göbekli Tepe in particular, the idea of large, ritualized feasts certainly gains importance in view of the clear intention to erect these monumental structures. Still, the question remains: when, how, and why did highly mobile hunter-gatherers start to be capable of creating such complex architecture at all, and in such a monumental scale in particular?

Large communal tasks-- and we would have to describe the construction of the enclosures at Göbekli Tepe as such without question--are best executed in the manner of collective work events. Ethnographic studies came up with a number of examples demonstrating that the work force necessary for collaborative mega-projects like this can be gathered through the prospect of lavish feasts. Estimating the labour involved in this kind of construction work is not an easy task, as data on population and group



size is scarce and parallels are rare. Figures, for ex- communities) of between 25 and 50 individuals, While PPN settlements usually are situated in favourable environmental positions with easy total of 20 individuals was sufficient to carve such access to water and a statue in their spare time within one year, up to other resources. 75 people were assumed to be required for mov-Göbekli Tepe in contrast is situated - topographically rather erratically - on the highest point of a mountain range far away from the nearest known springs. On the other hand, the site is widely visible as a natural landmark, physically dominating its surroundings. It thus seems to be to establish a central meeting place for nearby surroundings elements.

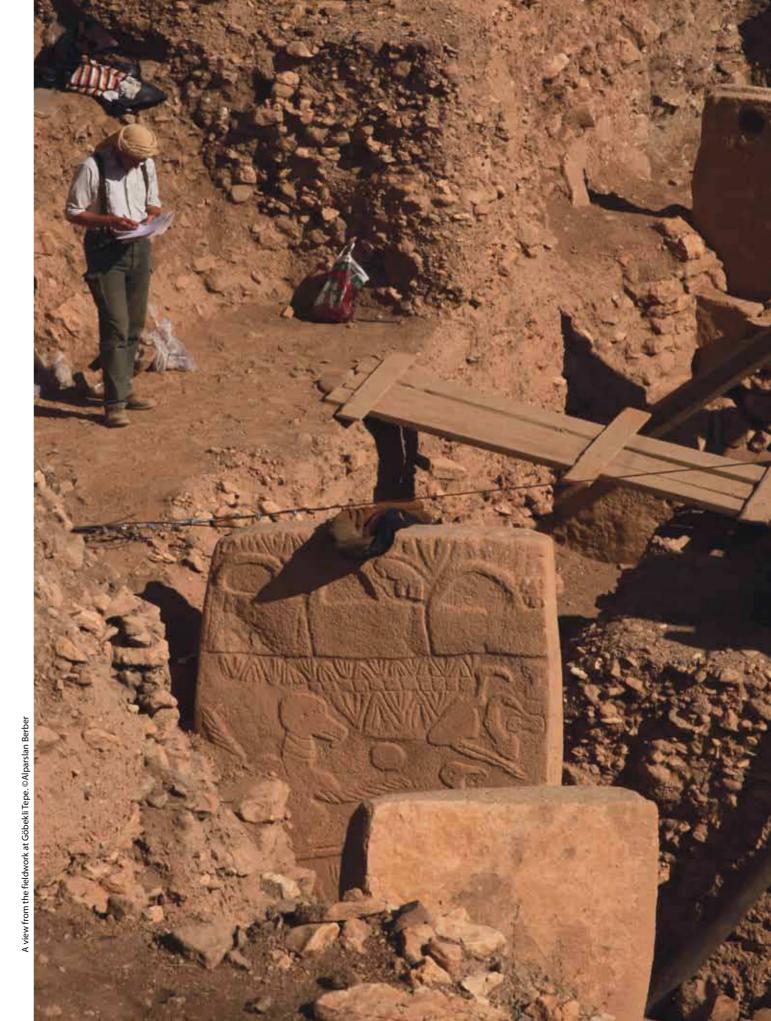
A duck head statue dated to the Pre-Pottery Neolithic Period B found at Nevalı Çori. Sanlıurfa Museum.

ing it a distance of 15 kilometres over the course of a week. At Göbekli Tepe, the monumental PPN A enclosures consist of several megalithic elements cut from the surrounding limestone plateaus. The setting of these Neolithic quarries is demonstrated by numerous remains of stone tools and limestone at the geographic extent of exchange networks or rubble as well as traces of extracted and semi-finished work pieces - among these are unfinished T-pillars still in situ. Cutting, decorating, and transporting them is not a small task, particularly if we assume that it had to be done over a relatively short ent at contemporaneous settlement sites is noted. It period of time in the context of occasional largescale social events. Of course, there still is the possibility that the enclosures were erected over a longer period, but research into their construction history the natural choice does not yet seem to indicate this. There is, on the hand with extensive consumption of high energy other hand, evidence for alteration and additional work in already existing enclosures, for ongoing repeople from the arrangement, repair, depletion and re-use of certain and the wider vicinity. Early 20th century ethnographic records from the Indonesian island of Nias indicate that up to 525 men were involved in hauling a megalith of 4 cubic metres over a distance of 3 kilometres in three days. It should be anticipated though that the number of persons included in such events could have exceeded the pure physical work force needed and that other social aspects, such as acquisition and maintenance of prestige, were motivating factors to participate as well. Another example from Indonesia illustrates that in Kodi, West Sumba the transport of

stones for the construction of megalithic tombs was erers (such as those in the tradition of these PPN as individuals, to accumulate surplus and thus ob-

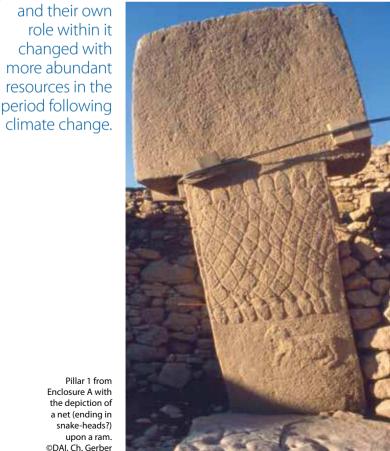
ample, for the erection of the giant moai statues of with an estimated 10 to 20 of such groups sharing Easter Island, with a height of 4 metres and a weight a common identity based on their material culture of 12 tons, have been reckoned to include anything and language. At Göbekli Tepe there are indications from a period of only days or a few weeks up to a for more than one group of people involved in conyear and even more. While some sources assume a structing the enclosures. Imagery associated with Enclosures A to D illustrates that they are not random at all, but seem to follow certain patterns for each enclosure (A: snakes, B: imagery scarce, foxes, C: boars, D: a large variety of depictions, with birds and snakes dominant), showing a different focus in each, which may offer an interpretation along the lines of distinctive markings of different clans working at Göbekli Tepe. Obsidian finds might hint even of groups visiting the site. With seven different kinds of raw materials present, originating from different volcanic areas in Bingöl, Nenezi Dağ, and Göllü Dağ, a variety much higher than usually presseems that large groups of people, likely originating from different regions, gathered at Göbekli Tepe at least seasonally for the construction of its monumental enclosures - which evidently went hand in food stuffs including cereals, pistachios, almonds, meat and particularly animal fat. Demographic profiling of game animals and isotope analysis of gazelle remains illustrate that such events most probably took place in late summer and autumn, i.e. after the harvest of wild cereals and pulses.

Such large-scale events, however, raise questions regarding the planning, organization, and coordination of the different tasks to be performed, thereby mirroring social complexity in these early PPN communities. It is this hitherto quite unexpected complexity which sheds new light on the development of the so-called Neolithic way of life in Upper Mesopotamia, i.e. the transition to agriculture and livestock husbandry, as well as the emergence of social stratification. With the climatic optimum ritualized and required a large number of people following the Younger Dryas cold spell, biomass as witnesses. Calculations based on ethnographic and hence food resources increased significantly, case studies suggest a group size for hunter-gath- enabling more competitive communities, as well



tain more powerful social positions, for instance Ouite in contrast through lavish feasts. to Paleolithic

> Repetitive feasting – as can be assumed to have taken place at Göbekli Tepe - surely must have stressed the economic possibilities of hunter-gatherer groups, considering that securing food for large gatherings must have been a difficult task. It seems intriguing to hypothesize that maybe in response to situations with huge 'instant' nutritional demands, new and more predictable food sources and techniques for processing had to be developed. The important role which cereals might have had played in the sociocultural context of feasting is underlined by yet another interesting discovery made at Göbekli Tepe. In addition to the consumption of large amounts of food, also a significant quantity of drink must be considered essential in these feasts. Water supply at the site is limited and the role of intoxicants, in particular alcoholic beverages, has been discussed



Pillar 1 from Enclosure A with the depiction of a net (ending in snake-heads? upon a ram ©DAI, Ch. Gerber

cave art, man

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Apparently, the

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beverages should hardly be surprising even in such early periods, as evidence of tartaric acid hinting at the presence of grape wine is reported for two stone vessels from the PPN cemetery of Körtik Tepe. At the site of Göbekli Tepe, several large, barrel- and trough-like vessels have been found in PPN B contexts (although fragments of such vessels appear in all strata), and are clearly integral, stationary furnishings of the particular rooms due to their size and capacities of up to 160 litres. Some of these stone vessels show grayish-black residues adhering to their lower walls. Although not completely conclusive, chemical analyses conducted on these residues indicate probable evidence of so-called oxalate, which develops during fermentation of cereals and thus can indicate the production of malt - and

in archaeological and ethnographic contexts alike.

Production and consumption of lightly alcoholic

therefore beer. The simplest brewing process would

indeed not need much more than large containers

for malting and mashing, and Göbekli Tepe's geo-

graphical situation within the distribution area of

a number of the so-called Neolithic founder crops

backs up the thought that large-scale feasting, with

its prompt demand for food supplies in the frame-

work of scheduled events, triggered or at least stim-

ulated efforts towards food production, including

The significant role of animal symbolism among the common iconography shared by a cultic community, as demonstrated in the examples of Göbekli Tepe and other related sites, emphasizes the importance of animals in early Neolithic cosmology and ritual practice. A noteworthy change in content in the repertoire of motifs compared to the preceding Paleolithic demonstrates a shift in mind-set following the end of the last Ice Age. Quite in contrast to Paleolithic cave art, man himself is taking on a much more prominent role in Neolithic pictorial art. Even more, humans are no longer depicted as a coequal part of nature, but are clearly more promi-

nent and 'raised' above the animal world. Appar-

ently, the way people perceived nature and their

own role within it changed with more abundant

resources in the period following climate change.

plant cultivation and livestock management.

Man was no longer only passively participating in the natural world, but actively starting to modify and utilize it. The anthropomorphic T-shaped pil-



A stone vessel from Göbekli Tepe. ©DAI, Göbekli Tepe Excavation Archive Enclosure D illustrates the general layout of the monumental circular PPN B architecture at Göbekli Tepe. ©DAI, N. Becker



lars may therefore illustrate the mindset that man began exerting power over the animal world. This 'mental' control could be regarded as a direct prerequisite for 'cultural' and thus 'physical' control, finally promoting animal husbandry and eventually domestication.

At Göbekli Tepe, no signs of domestication are visible in the animal bones or plaint remains excavated so far, but cultivation goes a long way and the first steps in that direction may not find visible reflection in plants' and animals' phenotypes. Genetic analyses have shown, however, that the domestication of single-grained einkorn and emmer wheat took place in the environs of the Karacadağ area, located in the catchment area of Göbekli Tepe.

The competition which becomes visible in this kind of feasting and the societal pressure it certainly would have brought along with it may have 'guided' early PPN hunter-gatherer groups into more sustainable ways of exploitation of food resources, rather than continuing traditional subsistence activities based on immediate returns. Surplus food, however, has to be accumulated, stored and - most importantly - redistributed. At this point, communities might have been confronted with the necessity of authority, promoting more charismatic individuals to positions of social power. With sustainable resource exploitation and long-term storage, permanent sedentism became necessary, which in turn generated larger communities, thereby causing inevitably more internal conflicts, fueling the demand for regulation and coordination, and thus authority and hierarchical structures. Important meetings of geographically distinct groups of hunter-gatherers of the scale we now begin to understand at Göbekli Tepe might therefore have functioned as an ignition for this major change in the history of mankind. To conclude, religiously motivated work feasts to draw as many hands as possible for the execution of complex, collective tasks, including the erection of monumental architecture, might well have paved the way for the onset of food production and therefore the kind of civilization we call our own.

