TAKING THE BULL BY THE HORNS: IDEOLOGY, MASCULINITY, AND CATTLE HORNS AT ÇATALHÖYÜK (TURKEY)

K.C. SWISS and N. RUSSELL

Abstract: Animal symbolism is a ubiquitous and powerful component of human ideology. Cattle were clearly the preeminent symbolic taxon in the Southwest Asian Neolithic, and archaeologists have argued that not just cattle, but specifically bulls, were key symbols. However, the biological attributes, including the sex, of the cattle used in Neolithic symbolic contexts remain largely unestablished. Furthermore, most of the cattle representations on which these arguments are based are not clearly male. In this article, we test the symbolic importance of taurine masculinity to early villagers by assessing the biological characteristics of cattle horns found in special deposits as well as in more prosaic contexts at the Anatolian Neolithic site of Çatalhöyük.

Keywords: Neolithic; Cattle; Bull; Symbolism; Çatalhöyük; Turkey.

Animal symbolism is a ubiquitous and powerful component of human ideology. Animals are commonly crucial elements of ritual activity, and their remains are frequently found in ritual deposits. In the Southwest Asian Neolithic, cattle were the preeminent symbolic taxon, and researchers have posited that not just cattle, but specifically bulls, were key symbols. Indeed, Neolithic populations have been called the “people of the bull”.1 These accounts commonly interpret bulls as symbols of masculinity and vitality2—that is, traits that scholars have seen as (a) propelling the diffusion of village life,3 or (b) sustaining ties to hunter-gatherer lifeways4. However, the biological attributes, including the sex, of the cattle used in Neolithic symbolic contexts remain largely unestablished. Furthermore, most of the cattle representations on which these arguments are based are not clearly male. A recent paper therefore challenged the supposed masculine associations of Çatalhöyük’s cattle horns, relying on modern ethnographic comparisons with Southeast Asian societies that also display bovine horns on their houses.5 We here marshal archaeological evidence to test the trope, and by extension the symbolic importance of masculinity to early villagers, assessing the biological characteristics of cattle horns found in special deposits such as feasts and architectural installations as

1. CAUVIN, 2000: 123.
5. TESTART, 2006.
well as those recovered from more prosaic contexts at the Anatolian Neolithic site of Çatalhöyük.

CATTLE CRANIA IN THE SOUTHWEST ASIAN NEOLITHIC

Cattle, and particularly cattle crania, are the dominant animal symbol of the Southwest Asian Neolithic, with the result that scholars have posited a widespread Neolithic “cattle cult”.6 Cattle images dominate figurine assemblages and appear in murals, reliefs, and stone carvings; special deposits of cattle remains are found throughout the region.7

Cattle crania, and particularly horns, appear to have been particularly symbolically weighted. At sites that have non-domestic architecture (e.g., Çayönü, Aswad), these buildings are often marked with cattle horns and skulls. Architectural installations involving cattle skulls and/or horn cores are reported from (proto-Neolithic) Hallan Çemi as well as Neolithic Çayönü and Jerf el-Ahmar;8 cattle horns were concealed in or under walls, floors, and benches at Mureybet, Halula, Tell ‘Abr 3, Dja‘de and Ginnig.9 A cache of both cattle and goat skulls at Ghwair I lay nearly atop a plastered floor, under which was a burial.10 Other sites with cattle horns and skulls apparently placed as abandonment deposits include Tell ‘Ain el-Kerkh (a pair of horns left on a building’s floor) and Tell Aswad (an aurochs skull placed across a threshold).11 Mortuary deposits involving cattle crania are likewise attested throughout the Neolithic: aurochs skulls and horns in a sub-floor pit with multiple human burials in Çayönü’s Skull Building, an aurochs cranium plausibly associated with a burial at Hatoula, and a fragmentary cattle horn in a burial at Menteşe.12

This symbolic richness underlies the long-powerful idea that the bull was a core symbol of the Neolithic Near East. J. Cauvin, the primary advocate for this view, interpreted the bull as an image of masculine power, the associate and complement to a feminine, civilizing goddess. He argued that the power of the bull for Neolithic populations developed in association with human dominance over nature and the wild:

“only he who can control instinct [e.g., the ‘brute violence’ symbolized by bulls] can truly and precisely be a man (...). It may be in that this dialectic of ‘virility’ (...) the real internal dynamism of the PPNB culture (...) lived on.”13

The wild bull symbolized the masculine component of the Neolithic ethos; it was this component that gave early agriculturalists their expansionist values and led to the diffusion of village lifeways.14

M. Verhoeven,15 despite questioning the centrality of the woman-and-the-bull cult in Neolithic ideology, has argued that:

“(...) the presence of aurochs [sic] horns in PPNB contexts may perhaps also be explained by invoking the concept of vitality (...). Maybe, as Cauvin (2000) has argued, the bull in general, and especially powerful and liminal elements like horns and blood (Verhoeven 2000a, 57-9), were metaphors for male dominance, power and vitality (...). [B]ulls do seem to be related to vitality, i.e. domestication, life-force and fecundity.”

Verhoeven stresses that PPNB animal iconography overwhelmingly involves wild animals rather than domesticates, and posits:

“(...) the presence of aurochs [sic] horns in PPNB contexts may perhaps also be explained by invoking the concept of vitality (...). Maybe, as Cauvin (2000) has argued, the bull in general, and especially powerful and liminal elements like horns and blood (Verhoeven 2000a, 57-9), were metaphors for male dominance, power and vitality (...). [B]ulls do seem to be related to vitality, i.e. domestication, life-force and fecundity.”

According to these models, the wildness and the masculinity of the animals are what makes them central to the early agriculturalists’ ideology: links between humans and wild male animals counterbalanced the ongoing domestication of both resources and society, enabling the maintenance of ties to hunter-gatherer lifeways.17

Although cattle masculinity and maturity are integral to these widely-cited interpretations of early agricultural ideology and the rise of domestication,18 the biological attributes of the cattle found in Southwest Asian Neolithic special deposits have been minimally queried. Their identity as bulls remains an assumption, allowing arguments ranging from the above to

18. See also Helmer et al., 2004.
the idea that animal sex was irrelevant, as cattle—male and female—were simply the Neolithic sacrificial species *par excellence*.19

Çatalhöyük’s relatively large assemblage of fairly complete cattle horn cores, as well as abundant contextual information, permit analyses that integrate data on animal age, size, and sex; depositional context; and varying treatments of the remains. It is thus uniquely well-suited to an investigation of the centrality of the bull in Neolithic ideology. In order to evaluate whether Neolithic populations chose primarily male, large, or prime-age animals for symbolic use, we first describe the site and its horn core assemblage, including the various types of cattle horn deposits and their probable social/ritual significance. We then compare and contrast the biological characteristics of the horn cores found in apparently ritual/special deposits with those from more prosaic contexts.

ÇATALHÖYÜK AND CATTLE SYMBOLISM

The Central Anatolian Neolithic site of Çatalhöyük was originally excavated by J. Mellaart in the early 1960s; excavations began again in 1995 and are ongoing.20 There are two mounds at Çatalhöyük, but Neolithic occupation is limited to the 34-acre East Mound. The occupation there spans approximately 7400–6000 cal. BC, and is associated with the regional Early Ceramic Neolithic. It is estimated that the site’s peak Neolithic population was between 3,500 and 8,000 people, making it one of the largest Neolithic settlements in the ancient Near East. In the initial years of the current project, effort was focused on reaching the lowest levels of the site, now published in a series of monographs.21 More recently, excavation has targeted the later levels; analysis of this material is currently incomplete.

The site was supported by a combination of crop agriculture, caprine herding, intensive gathering, and hunting. So far, only the animal remains from the earlier part of the sequence, dating to between ca 7400 and 6500 cal. BC, have been fully analyzed. In these levels, cattle constitute 20–25% of the faunal assemblage, and there is no indication of domestication.22 Preliminary analysis of the later levels shows that cattle drop to ca 10%; domestication status has not yet been determined for these levels. Villagers dwelt in mudbrick houses built so close together that occupants accessed them through their roofs. All buildings are believed to have been occupied: there are no specialized shrines or temples at the site. Nonetheless, Çatalhöyük is renowned for its rich and varied symbolic repertoire. Figurines, wall paintings and moldings, and worked bone and stone artifacts abound, as do burials, ritual caches, and other kinds of structured deposits. There is evidence for feasting, complex mortuary ceremonialism, and possibly deliberate incineration of buildings.

The symbolic importance of cattle at Çatalhöyük has long been recognized. Cattle are the most common animal represented in the zoomorphic figurine assemblage, and animal (mostly cattle) horns make up 78% of the zoomorphic figurine assemblage.23 Only two certain examples of bulls in wall paintings have been found (one more animal may be a bull), but both are immense cynosures surrounded by smaller figures of humans and other animals.24 Limited numbers of cattle appear to have been consumed, but they feature disproportionately in feasts.25

Within the general body of cattle symbolism, a particular emphasis on heads and horns is apparent. As noted above, cattle horns figure prominently in the site’s iconography, its ritual activity, and even its architecture. Sometimes the “horns” are mere artistic representations of cattle horns,26 but actual *Bos* cranial remains are frequently used. They are embedded in walls and benches, installed in the architecture, ceremonially deposited in caches and abandoned buildings, and even included (rarely) in burials. Additional ideological weight was provided to a minority of Çatalhöyük’s horns and bucrania via plastering—a treatment associated regionally with selected human skulls, and not reported on cattle horn cores from other sites. Interestingly, at Çatalhöyük (as at Mureybet), some cattle horns are incorporated into buildings in ways that leave them invisible. These occurrences, as well as the abandonment deposits, suggest that cattle horns were not just trophies for display; they had non-display significance as well.

It is possible that horns were distinctive visual shorthand for complete crania, whole animals, or particular ceremonies. It is also possible that horns had significance apart from, or above and beyond, that of complete heads. Because there is no clear cut mark evidence for horn removal at Çatalhöyük, and because many horn cores are found attached to skulls, it seems unlikely that horns were typically disassociated from crania.

---

20. HODDER, 2006b.
21. e.g., HODDER, 2005a-b, 2006a and 2007.
22. RUSSELL et al., 2005.
23. HAMILTON, 2005.
24. RUSSELL and MEECE, 2005.
25. RUSSELL and MARTIN, 2005; FRAME et al., 1999.
26. e.g., HAMILTON, 2005; LAST, 2006; RUSSELL and MEECE, 2005.
However, it remains possible that they had meaning beyond that of the rest of the skull: e.g., Verhoeven’s\textsuperscript{27} suggestion that horns often symbolize strength and dominance.

THE ÇATALHÖYÜK CATTLE HORN ASSEMBLAGE

All that remains today of Çatalhöyük’s many cattle horns are their cores. Horn cores are the bony centers of horns, which in life are covered by keratinous sheaths. The sheaths do not preserve at Çatalhöyük. It is possible that they were present during the horns’ use. Treatment of the horn cores is difficult to assess, particularly since many horns are likely to have passed through multiple stages of use. A core’s treatment—its modification, decoration, etc.—may have varied over the course of its use-life. In general, there are few if any direct indications of horn sheath removal, such as cut marks. This suggests that sheaths were usually left on the horns. However, in some specimens that include both horn and skull fragments, the horn cores, but not the skulls, are plastered, and the plaster is so tight on the core that it can only have been applied after the sheath was gone. Either these sheaths were removed for another use, or else these horns remained in use for so long that the sheaths were lost or damaged. In the latter case, perhaps the plastering represents an attempt to “replace” the missing sheath.

Since 1995, excavations have yielded 12,466 Neolithic cattle horn cores and horn core fragments. Because horn cores are often quite fragile, most of these are heavily fragmented splinters. Our comparatively low number of specimen records (716) reflects this fragmentation, as we group analytically identical fragments (from the same context, and with all the same characteristics) into single database records. The minimum number of elements (MNE, based on horn core tips)\textsuperscript{28} represented is 71:

\textsuperscript{27} Verhoeven, 2002.

\textsuperscript{28} We recognize that the horn-tip measure for calculating MNE is not ideal. However, horn cores are fragile, easily distorted in the ground, and intrinsically unlikely to survive. Tips are the densest portion of the core.
clearly a great underestimate. Our data tables include both the number of identified specimens (NISP, which heavy fragmentation inflates) and the MNE (which fragmentation decreases). The total weight of the horn core assemblage cannot be precisely assessed: many specimens include fragments of cranial remains; others have plaster or clay attached to their surfaces; and a complete bucranium, a horned bench, and two horned pillars have been left *in situ* for display (figs. 1-2). We estimate the total weight of the Çatalhöyük horn core assemblage to be on the order of 154 kg. Many fragments were broken during excavation rather than predepositionally. The average length of the undamaged specimens is 13.1 cm.

Three morphological types are apparent in the Çatalhöyük horn core assemblage (figs. 3-4; table 1). Type 1 horns are long (*ca* 0.5 m from base to tip in a straight line, not around the curvature), robust, and curve outwards from the skull, dip downward midway along the corpus, and then rise again at the tip. Type 2 horns are shorter and more tightly curved (straight line base-tip *ca* 35 cm), fatter, and have a simpler curve: they do not dip down midway, and rise only slightly at their tips. They are quite broad in relation to their length, as their greatest breadths at the base are comparable to those of Type 1 horns, but Type 2 horns are far shorter. Type 3 horns are roughly comparable to Type 2 horns in length (maximum base-tip line is *ca* 30 cm), and have a similarly simple curvature (rising slightly at tip), but they are distinctly slimmer than Type 2 horns. They also appear to have round cross-sections at their bases rather than the ovoid bases seen with Type 1 and Type 2 horns.

Type 1 horns display a classic male *Bos primigenius* (wild cattle, or aurochs) morphology, and we interpret them as such. Notably, they are also found throughout the entire Çatalhöyük sequence of occupation, including early levels where no

---

*Fig. 2 – Bucranium and collapsed bench with horns, Building 52. (Photo by J. QUINLAN; © Çatalhöyük Research Project.)*

---

evidence of domestic cattle has been found. Type 2 horns, shorter than Type 1 but also robust, could theoretically represent (a) a separate morphology of male aurochs, (b) the female aurochs correlating to Type 1 males, (c) castrated male aurochs in an early animal management regime, or (d) male domestic cattle (Bos taurus). Our best examples of Type 2 horns belong to the later eras of occupation on site (see table 1), but given the small sample size of this type, it is unclear whether this is a genuine temporal association. While domestic cattle are a theoretical possibility in levels postdating Level VI (because most of this material awaits full analysis), as of summer 2009 we have not identified any. Furthermore, the basal breadth of these horn cores—one of the most reliable sexing criteria—ranges well up into the range of Type 1 cores. As regards to castrates, there is at present neither metrical nor contextual evidence for castrates in the Çatalhöyük assemblage; also, at least among the domestic cattle studied by P.L. Armitage and J. Clutton-Brock, castration produced longer, not shorter, horns. Thus, the most parsimonious explanation is that Type 2 represents a variant male aurochs morphology. Like Type 1 cores, Type 3 horns are found in levels where metrical analysis of postcranial specimens has detected no domestic cattle, and despite their smallness in comparison with Types 1 and 2, are within the size range of female aurochs. Current evidence thus supports their interpretation as wild females. Our interpretations—Type 1 as male, Type 3 as female, Type 2 as probably male—are consistent

30. See Russell et al., 2005.

Taking the Bull by the Horns: Ideology, Masculinity, and Cattle Horns at Çatalhöyük

with N. Sykes and R. Symmons reevaluation of sexing criteria provided by Armitage and Clutton-Brock and Armitage, wherein basal measurements provide the most reliable sex separation.

A range of ages is represented in the horn core assemblage. 41 (by MNE; NISP = 118) specimens’ rough ages were assessed based on core porosity, size, and/or articulation with other ageable elements (table 2). Of these, 21 (MNE; NISP = 26) were aged more precisely using Armitage (table 3). A minority of the animals died while they were still immature, a slightly greater proportion as subadults or young adults, most as mature adults, and one animal appears to have survived into old age. Both right and left horn cores are represented in significant numbers (table 4). No pathologies have been found.

A pronounced majority of the Catalhöyük horn cores come from males (table 5). Of the 45 sexable specimens, 15 are clearly male, and another 17 probably so. Only one specimen is certainly female and twelve more probably so. This translates to a ratio of 71% male/probably male specimens to 29% female/probably female specimens. This preponderance of males surely explains the fact that more horns came from noticeably large animals (n = 28) than from small ones (n = 7) (table 6). (The majority of the specimens were either not particularly large or small [“standard”], or were too fragmentary to judge.)
Table 2 – Ages of horn cores’ source animals. “Young” includes all specimens that were clearly immature but could not be aged more precisely than that. The more precise age classes are as follows: roughly up to 1 year for infantile; 1-3 years for juvenile; 3-4 years for subadult; over 4 years for adult. “Old” does not have a specific age range attached.

<table>
<thead>
<tr>
<th>Age</th>
<th>All horn cores</th>
<th>Special horn cores</th>
<th>Non-special horn cores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NISP</td>
<td>% NISP</td>
<td>MNE</td>
</tr>
<tr>
<td>Young</td>
<td>57</td>
<td>48.3</td>
<td>1</td>
</tr>
<tr>
<td>Infantile</td>
<td>5</td>
<td>4.2</td>
<td>0</td>
</tr>
<tr>
<td>Juvenile</td>
<td>1</td>
<td>0.8</td>
<td>1</td>
</tr>
<tr>
<td>Juvenile/Subadult</td>
<td>3</td>
<td>2.5</td>
<td>2</td>
</tr>
<tr>
<td>Subadult</td>
<td>2</td>
<td>1.7</td>
<td>0</td>
</tr>
<tr>
<td>Subadult/Adult</td>
<td>14</td>
<td>11.9</td>
<td>5</td>
</tr>
<tr>
<td>Adult</td>
<td>34</td>
<td>28.8</td>
<td>29</td>
</tr>
<tr>
<td>Old</td>
<td>2</td>
<td>1.7</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>118</td>
<td>41</td>
<td>33</td>
</tr>
</tbody>
</table>

HORN CORES IN CONTEXT

Sizeable horn core pieces have been recovered from a wide variety of contexts. Some were incorporated either visibly or invisibly into the architecture; others come from intramural or extramural fill. While some horns probably moved through more than one context during their use-lives, we consider their final locations to be significant.

The most famous of Çatalhöyük horn cores are architectural installations. Mellaart recorded three variants: frontlets (horn cores and the intervening skull) set in plaster heads attached to walls; frontlets set in small pillars along the edges of platforms; and pairs of horns set into benches. Notable recent finds include a bench with three left horns protruding from its northern side, two frontlets set into pillars edging a platform, and the remains of a plastered skull set on the floor against a wall. The current project has also found single horns set into walls and concealed in architecture. Horns set in walls and benches would have been on display, but many installed horns were essentially invisible, integrated into the architecture. One house contained a cattle horn plastered over to form the arm of a bin; another house’s wall had a horn segment and two cattle scapulae laid between its brick rows.

Feasting remains are concentrations of large pieces of bone, processed for marrow but not bone grease: this treatment contrasts with that of most animal bone at Çatalhöyük, which is more heavily processed. Feasting deposits are found chiefly as pockets in middens or in between-wall spaces, but also as abandonment deposits. Some include cattle horns.

Many cattle horns appear to have been placed in houses at abandonment or at demolition and filling. Some of these deposits include partial or complete skulls; others focus more exclusively on horns. Recent examples include a skull with one horn shoved into an oven alongside a partially articulated dog carcass; multiple horns plus a frontlet in a deposit that also included a fragmentary human skull and an elaborate, bone-handled flint dagger; and two pieces of horn and a partial cattle skull placed on a floor together with a collection of cattle scapulae. Mellaart also alludes to cattle horns in what seem to be abandonment deposits.

Some horn cores found on floors and in fill were coated with plaster, suggesting that they are dismantled installations. A few of these are associated with probable feasting deposits, e.g., a feasting spread in Building 2 that includes a large piece of horn core as well as a complete horn leaning against a bin. The horn core retained some plaster on its base, and had many chop marks along its corpus. The placement of these marks makes no sense in terms of horn sheath removal (which entails

39. Twiss et al., 2008.
Table 3 – ARMITAGE, 1982: 38, age stages for the Çatalhöyük horn cores. Armitage suggests that classes 0-2: immature animals; class 3: young adult; class 4: adult; classes 5-6: old adults; but these correlations are tentative.

<table>
<thead>
<tr>
<th>Age class</th>
<th>All horn cores</th>
<th>Special horn cores</th>
<th>Non-special horn cores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NISP % NISP MNE % MNE</td>
<td>NISP % NISP MNE % MNE</td>
<td>NISP % NISP MNE % MNE</td>
</tr>
<tr>
<td>0-2</td>
<td>0 0 0</td>
<td>0 0 0</td>
<td>0 0 0</td>
</tr>
<tr>
<td>3-4</td>
<td>4 15.4 3 14.3</td>
<td>1 7.7 1 9.1</td>
<td>3 23.1 2 18.2</td>
</tr>
<tr>
<td>4</td>
<td>5 19.2 4 19.0</td>
<td>1 7.7 0 9.1</td>
<td>4 30.8 4 36.4</td>
</tr>
<tr>
<td>5</td>
<td>12 46.2 9 42.9</td>
<td>9 92.2 6 54.5</td>
<td>3 23.1 3 27.3</td>
</tr>
<tr>
<td>6</td>
<td>5 19.2 5 23.8</td>
<td>2 15.4 3 27.3</td>
<td>3 23.1 2 18.2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>26 21 13 10</td>
<td>13 10 9 7</td>
<td>13 11</td>
</tr>
</tbody>
</table>

Table 4 – Horn core siding.

<table>
<thead>
<tr>
<th>Side</th>
<th>All horn cores</th>
<th>Special horn cores</th>
<th>Non-special horn cores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NISP % NISP MNE % MNE</td>
<td>NISP % NISP MNE % MNE</td>
<td>NISP % NISP MNE % MNE</td>
</tr>
<tr>
<td>Right</td>
<td>48 39.0 28 46.7</td>
<td>21 45.7 16 39.0</td>
<td>27 35.1 12 63.2</td>
</tr>
<tr>
<td>Left</td>
<td>62 50.4 15 25.0</td>
<td>12 26.1 8 19.5</td>
<td>50 64.9 7 36.8</td>
</tr>
<tr>
<td>Right and left</td>
<td>13 10.6 17 28.3</td>
<td>13 28.3 17 41.5</td>
<td>0 0.0 0 0.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>123 60 46 41</td>
<td>46 41 17</td>
<td>77 19</td>
</tr>
</tbody>
</table>

Table 5 – Sexes of horn cores’ source animals. Sexing based on ARMITAGE and CLUTTON-BROCK, 1976. The right-hand column provides comparative information about sex ratios metrically derived from postcranial remains (see RUSSELL and MARTIN, 2005: 51-53 for methodological details).

<table>
<thead>
<tr>
<th>Sex</th>
<th>All horn cores</th>
<th>Special horn cores</th>
<th>Non-special horn cores</th>
<th>Postcrania in special contexts</th>
<th>Postcrania in non-special contexts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NISP % NISP MNE % MNE</td>
<td>NISP % NISP MNE % MNE</td>
<td>NISP % NISP MNE % MNE</td>
<td>NISP % NISP MNE % MNE</td>
<td>NISP % NISP MNE % MNE</td>
</tr>
<tr>
<td>Male</td>
<td>18 35.3 15 33.3</td>
<td>13 37.1 12 36.4</td>
<td>5 31.3 3 25.0</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Probably male</td>
<td>21 41.2 17 37.8</td>
<td>15 42.9 13 39.4</td>
<td>6 37.5 4 33.3</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Female</td>
<td>1 2.0 1 2.2</td>
<td>0 0.0 0 0.0</td>
<td>1 6.3 1 8.3</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Probably female</td>
<td>11 21.6 12 26.7</td>
<td>7 20.0 8 24.2</td>
<td>4 25.0 4 33.3</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Males and probable males</td>
<td>39 76.5 32 71.1</td>
<td>28 80.0 25 75.8</td>
<td>11 68.8 7 58.3</td>
<td>59 (67.8%)</td>
<td>36 (52.2%)</td>
</tr>
<tr>
<td>Females and probable females</td>
<td>12 23.5 13 28.9</td>
<td>7 20.0 8 24.2</td>
<td>5 31.3 5 41.7</td>
<td>28 (32.2%)</td>
<td>33 (47.8%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>51 45 35 33</td>
<td>16 12 37</td>
<td>69</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6 – Sizes of horn cores’ source animals.

<table>
<thead>
<tr>
<th>Size</th>
<th>All horn cores</th>
<th>Special horn cores</th>
<th>Non-special horn cores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NISP % NISP MNE % MNE</td>
<td>NISP % NISP MNE % MNE</td>
<td>NISP % NISP MNE % MNE</td>
</tr>
<tr>
<td>Large</td>
<td>112 0.9 28 40.0</td>
<td>60 0.6 19 39.6</td>
<td>52 2.5 9 40.9</td>
</tr>
<tr>
<td>Standard</td>
<td>11,709 99.0 35 50.0</td>
<td>9,729 99.4 25 52.1</td>
<td>1,979 97.0 10 45.5</td>
</tr>
<tr>
<td>Small</td>
<td>12 0.1 7 10.0</td>
<td>2 0.0 4 8.3</td>
<td>10 0.5 3 13.6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>11,833 70 9.791 48</td>
<td>2,041 22</td>
<td>—</td>
</tr>
</tbody>
</table>
chopping around the base), so we interpret these as scars from the demolition of the installation to which it once belonged.

A few cattle horns are associated with commemorative deposits.41 Building 1 has two such deposits, plus an abandonment deposit on the floor. A complete female aurochs horn lay on a bed of small stones against the building’s outer wall: this deposit, which is stratigraphically associated with Building 1’s construction, also included a dog skull, two wild goat horn cores, a stone macehead, and a crane wing modified for suspension.42 The second deposit was buried inside a platform, and included a large chunk of cattle skull and horn core, several large potsherds, and some cattle postcrania.

Animal remains are rarely found in human burials at Çatalhöyük,43 and we know of only two cases involving cattle horns. Both come from the East Mound’s latest Neolithic levels, so they may signal a diachronic change in burial practice. The first example consists of a cattle frontlet (within the size range of female aurochs) with a human skull nestled under its center, as though the person were wearing the frontlet as a hat. Unfortunately the exact context is unclear, as a Hellenistic pit disturbed the area adjacent to the human skull. There are a few human bones on the other side of the pit, so it was probably a complete body rather than an isolated skull. The disturbance makes confidence impossible, but the excavators could find no trace of a pit, and believe that the body and cattle frontlet were placed in the room as it was filled. Another burial in the same room contains a cattle horn.

Finally, several cattle horns and crania have been found in midden deposits. These may simply be butchery waste, but some occur in bone concentrations, suggesting that they are dismantled installations or part of feasting deposits. Examples include one midden’s complete horn core found associated with a concentration of cattle bones, and a separate midden’s bone concentration containing cattle, sheep (possibly wild) and goat horn cores.

The variety of special treatments commonly accorded cattle horns indicate that they were symbolically laden on multiple fronts. Indeed, the abundance and contextual variety of Çatalhöyük’s horn cores suggest that horns played a key role in multiple forms of ritual at the site. They are thus uniquely well-suited to an investigation of the ideological significance of wildness, masculinity, and/or other biological traits. We turn now to the biological traits that characterize horn cores found in “special” contexts, contrasting them with those from domestic assemblages.

THE CHARACTERISTICS OF HORN CORES FOUND IN “SPECIAL” CONTEXTS

We define special contexts as feasting spreads, installations, and caches, and discuss them using MNE counts. Fifty-three horn cores were deemed “special” or probably special, a pronounced majority of the horn core assemblage (table 7: the distinction between certainly and probably special is based on reliability of context, e.g., a horned pillar installation [certainly] vs horns found by a collection of minimally processed limb bones [probably]). Of the 48 cores that are certainly special, 33 are sexable: 76% of these are male or probably male. A (weaker) bias in favor of males (58%) is apparent among the 12 “non-special” horn cores (table 5).

41 of the special cores could be sided. 39.0% were rights, 19.5% lefts, and 41.5% were part of bucrania. These proportions are different from those found among the 19 sidable non-special cores (63.2% rights, 36.8% lefts, 0% bucrania). However, if one counts the two horns of each bucranium separately as one right and one left, then the right: left ratio among the special horns is 56.9%:43.1%, fairly similar to that seen among the non-special horn cores. There is therefore a bias toward right-hand horn cores in both groups; this may be attributable to statistical variation in a limited-size assemblage.

Forty-eight special horn cores were assessed as to animal size (table 6). 52.1% were from animals within the standard size range for Çatalhöyük Bos, while 39.6% were from particularly large specimens, and 8.3% from small animals. Again, the ratios are similar among the 22 non-special horn cores: 45.5% standard-size, 40.9% large, and 13.6% small.

Table 7 – Proportions of horn cores deemed special (i.e., belonging to feasting spreads, installations, and caches).

<table>
<thead>
<tr>
<th>Special?</th>
<th>NISP</th>
<th>% NISP</th>
<th>MNE</th>
<th>% MNE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>9,791</td>
<td>82.7</td>
<td>48</td>
<td>67.6</td>
</tr>
<tr>
<td>Probably yes</td>
<td>161</td>
<td>1.4</td>
<td>5</td>
<td>7.0</td>
</tr>
<tr>
<td>No</td>
<td>1,336</td>
<td>11.3</td>
<td>5</td>
<td>7.0</td>
</tr>
<tr>
<td>Probably no</td>
<td>40</td>
<td>0.3</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Maybe</td>
<td>505</td>
<td>4.3</td>
<td>13</td>
<td>18.3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>11,833</strong></td>
<td><strong>71</strong></td>
<td><strong>58</strong></td>
<td><strong>91.4</strong></td>
</tr>
</tbody>
</table>

May and probably no 1,376 12.1 5 8.6

<table>
<thead>
<tr>
<th>Special?</th>
<th>NISP</th>
<th>% NISP</th>
<th>MNE</th>
<th>% MNE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes and probably yes</td>
<td>9,951</td>
<td>87.9</td>
<td>53</td>
<td>91.4</td>
</tr>
<tr>
<td>No and probably no</td>
<td>1,376</td>
<td>12.1</td>
<td>5</td>
<td>8.6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>11,327</strong></td>
<td><strong>58</strong></td>
<td><strong>91.4</strong></td>
<td><strong>91.4</strong></td>
</tr>
</tbody>
</table>

41. RUSSELL et al., 2009.
42. RUSSELL and MCGOWAN, 2003.
43. RUSSELL and DURING, 2006.
Twenty-nine special horn cores could be aged, as could twelve non-special cores (tables 2-3). Prime-age and older adults overwhelmingly dominated both samples, while very few young animals were represented among either group. In contrast, subadult and adult age groups formed about half of the cattle remains assessed by dental criteria and epiphyseal fusion, indicating either taphonomic loss of younger horn cores or failure to transport these horns to the site.

In sum, no pronounced differences exist between the special and non-special horn core assemblages. What differences there are can plausibly be attributed to either (a) sampling bias in moderately-sized assemblages (e.g., the modest differences between the two groups with respect to sex, size, and age ratios), or (b) definitional/taphonomic bias (e.g., the lack of bucrania among the non-special cores. Bucrania are unlikely to remain intact unless sheltered from weathering, carnivores, trampling and repeated reposition; they are far more likely to receive such protection as special deposits such as installations and abandonment deposits than they are in middens). Both the special and the non-special groups emphasized mature animals and males; biases toward large animals and right-hand-side horn cores were also apparent.

**DISCUSSION**

Zoological analysis of the entire Çatalhöyük horn core assemblage indicates that it is not a random sample from a natural population. Significant selection biases exist in favor of mature animals and males. Since masculinity and size are correlated in Bos, it is possible that the emphasis on large specimens was merely a byproduct of the focus on males—an idea supported by the fact that the majority of the horns in the special as well as the non-special assemblages are from medium-sized aurochs. Horn symmetry also appears to have been relevant. This conclusion is reinforced by two finds in a single burned building: all of the sizable specimens in a cache of at least 13 tightly-bunched horn cores found in the fill were rights, while the three large horn cores protruding from a plastered bench were all lefts.44

There are, however, only limited differences between the biological characteristics of the horns discovered in special contexts (i.e., abandonment deposits, ceremonial trash, architectural installations, and caches) and those discovered in ostensibly prosaic contexts such as middens. This suggests that the inhabitants of Çatalhöyük either targeted adult male aurochs for slaughter, or they preferentially brought the crania of such animals on site over those of females and juveniles.

Horn core sex and age patterns do not match those of the general Çatalhöyük Bos assemblage (nearly 50% females in daily contexts [table 5], and 18-28% juveniles).46 Therefore, the bias towards adult male horn cores does not straightforwardly reflect hunting strategies—all ages and both sexes were taken. However, the postcranial remains do reveal a pronounced bias toward larger animals (presumably males) in feasting/special deposits (table 5).47 Juvenile cattle are also slightly more frequent among early levels’ daily consumption remains than in special contexts: they constitute 18% of these levels’ total cattle remains, but 26% of those found in non-special contexts.48 No such bias is apparent in later levels, in which juveniles contribute 28% of daily remains, and 28% of all remains.49 The Çatalhöyük Bos assemblage thus indicates that while aurochs cows and calves were regularly taken, bulls were distinctly preferred for special activities.

This suggests that many of the site’s horn cores—not just those from clearly special deposits—derive from feasting and/or other ritualized activities. A significant percentage of cows’ and calves’ horns must have been either deposited off-site or processed in a fashion that rendered them archaeologically unidentifiable.46 Among those horns that were brought on site, additional selection for males is apparent among the special-context specimens. It is therefore clear that large adult males were specially selected for use in ritual contexts. However, the inclusion of small but significant numbers of females and young animals among the special-context remains indicates that large males were not absolutely required in all cases.

Bulls are larger and fiercer than cows, and if a herd is managed fewer adult males are required for herd security. Selection for adult males suggests a desire for (a) maximally prepossessing physical specimens, (b) maximally dangerous game animals, (c) relatively expendable herd animals, (d) maximum meat yield, or (e) some combination of these motives. Given that the Çatalhöyük cattle were wild,51 biological expendability was probably less important to the villagers than physical presence and/or danger, but beyond that we cannot at present...
say which factor(s) shaped the selection of bulls for feasts and other ritual activities at Çatalhöyük.

Our findings confirm that at Çatalhöyük, the “people of the bull” did, in fact, prefer adult males over female and juvenile aurochs for feasts and symbolic use. Bulls were not an absolute prerequisite for ritual activity, however, indicating that masculinity was not the exclusive factor in the site’s taurine symbolism. It would be interesting to learn whether bulls were similarly preferred—but not indispensable—at other sites throughout the Neolithic Near East. As stated above, cattle horns have been recovered at numerous Southwest Asian sites, although in most cases little age/sex/morphology information has been published about them. Simple visual assessment of horn core images (comparing them, for example, with the typology provided here) could provide some idea of male:female ratios among those cores deemed noteworthy enough to photograph or draw. This would be a biased sample, though: truly understanding the importance of the bull to Neolithic populations will require systematic study of all horns, from all kinds of contexts, and from multiple sites.

Whatever the emic symbolic meaning of bulls, the slaughter and consumption of such large and dangerous animals would have endowed hunters and feasters with considerable status, well worthy of commemoration through display and depiction.52 Younger animals and females would have constituted less of a challenge as well as provided less meat. Finally, adult bulls have the largest, most impressive horns: at Çatalhöyük, these were preferred for display and likely embodied the power of the bull.

ACKNOWLEDGMENTS

We thank A. Bogaard, A. Demiregri, J. Henecke, H. Maiko, and four anonymous reviewers for comments; J. Quinlan for the photos; K. Killackey for the illustration; and M.P. Charles for the title. This paper is based upon work supported by the National Science Foundation under Grant No. 0647131. Above all, thanks to L. Martin, who contributed extensively to getting this research off the ground and to preliminary work on description of the Çatalhöyük cattle horn cores.

Katheryn C. TWISS
Department of Anthropology
Stony Brook University
Stony Brook, NY 11794-4364
USA
Katheryn.twiss@stonybrook.edu

Nerissa RUSSELL
Department of Anthropology
Cornell University
Ithaca, NY 14853
USA
nr29@cornell.edu

BIBLIOGRAPHY

ALPASLAN-ROODENBERG S.

ARMITAGE P.L.

ARMITAGE P.L. and CLUTTON-BROCK J.

BOKONYI S.

CAMPBELL S. and BAIRD D.
1990 Excavations at Ginnig, the Aceramic to Early Ceramic Sequence in North Iraq. Paléorient 16,2 : 65-78.

CAUVIN J.

FRAME S., RUSSELL N. and MARTIN L.

GORING-MORRIS A.N. and HORWITZ L.K.

52. RUSSELL and MARTIN, 2005; TWISS, 2008.
Taking the Bull by the Horns: Ideology, Masculinity, and Cattle Horns at Çatalhöyük

GREGSON C.

HAMILTON N.

HELDER D., GOURICHON L. et STORDEUR D.

HILL E.

HODDER I. (ed.)

HODDER I.

LAST J.A.

LICHEVALLIER M. et RONEN A. (éd.)

MALLOWAN M.

MELLAART J.

MOLIST M.

ÖZDOĞAN A.

ROLLEFSON G.O., SIMMONS A. and KAFAFI Z.

ROUSENBURG M.

RUSSELL N. and DURING B.S.

RUSSELL N. and MARTIN L.

RUSSELL N. and MIECE S.

RUSSELL N. and MCGOWAN K.J.

RUSSELL N. and MIECE S.
2005 Worthy is the Lamb: A Double Burial at Neolithic Çatalhöyük (Turkey). Paléorient 32,1 : 73-84.

RUSSELL N. and DURING B.S.

RUSSELL N. and DURING B.S.

RUSSELL N., MARTIN L. and SWITZ K.C.

SIMMONS A.H. and NAJJAR M.

SÝKEŞ N. and SYMONS R.

TESTART A.

TSUNEKI A.

TWISS K.C.

TWISS K.C., BOGAARD A., BOGDAN D., CARTER T., CHARLES M.P., FARID S., RUSSELL N., STEVANOVIĆ M., YALMAN E.N. and YEOMANS L.

UERPMANN H.-P.

VAN VUURE C.

VERHOEVEN M.

YARTAH T.