PREHISTORIC AND HISTORIC CERAMIC PRODUCTION IN THE BANNU BASIN, N.W.F.P., PAKISTAN: A REVIEW

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Introduction

Since 1985, members of the Bannu Archaeological Project have been engaged in a long term research programme investigating the Prehistoric and Historic period archaeology of the Bannu Basin, which lies in the North West Frontier Province (N.W.F.P.), Pakistan. The survey and excavation of numerous Late Prehistoric archaeological sites, including Sheri Khan Tarakai, Girdai, Ter Kala Dheri, Lak Largai, Lewan, Islam Chowki and Tarakai Qila, and excavation of Historic period occupation at Ter Kala Dheri and the great mound site of Akra have shown that there is a clearly defined and often highly distinctive cultural sequence for the Bannu region that spans the period between c.4000 BC and c.AD 1200 (see Figure 1).

Over the last 40 years, excavations have also been carried out at a number of sites on the Gomal Plain, which is a geographically distinct part of the N.W.F.P. that lies to the south of the Bannu Basin. The excavations at sites such as Gumla, Jhandi Babar A, Rehman Dheri and Ghandi Umar Khan (see Figure 1), have shown that in certain Late Prehistoric periods, there is a very close relationship between the cultural sequences of the Bannu and that Gomal regions, while in others, the cultural sequences of the two regions appear to take divergent trajectories. This is particularly significant for our understanding of patterns of social and economic development, and of interaction both within the N.W.F.P. and between the N.W.F.P. and the borderland regions of Balochistan, the Indus Valley, and the regions of Central Asia to the west and north.

The distinctiveness of the cultural assemblages in these borderland regions continues into the Historic periods, during which time the western parts of South Asia witness the rise of urban centres at more or less the same time as they were appearing along the Ganges (Magee et al. 2005). In the subsequent centuries, a diverse range of outside forces expanded into the region, including the Achaemenids, Indo-Greeks, Kushans, Sasanians, Kidarites, Hepthalites, Turkic Kaghans, and various waves of Islamic conquerors who fought against the local Turki and Hindu Shahi kings from the 7th to the 11th centuries AD.

The major category of evidence that has been used to differentiate the cultural phases in the Bannu region has been the ceramic material. The ceramic assemblage that characterises each period presents a specific combination of decorative, morphological and technological elements which when viewed together give an indication of the type of social and economic systems that were in place at the time that these vessels were being produced. Further evidence for these social and economic systems is provided by the scientific analysis of ceramic samples, which provides specific insight into processes of production and distribution. In order to provide a long term perspective of the changes that were taking place during the Prehistoric and Historic periods in the Bannu Basin, this paper will introduce the characteristic material from each cultural phase, contextualise them in terms of its relationships to material from other areas, and then assess them in terms of what they tell us about the social and economic systems that were in operation at the time.

Late Prehistoric Ceramic Production

The Sheri Khan Tarakai Phase

The earliest phase of ceramic use that has thus far been identified in the Bannu Basin is the so-called Sheri Khan Tarakai (or SKT) phase, named after the type site. This phase is marked by the

appearance of two distinctive classes of hand made ceramic vessel types that have been referred to as 'A' Ware and 'B' Ware (Khan et al. 1991: 39; see Figure 2a). The SKT 'A' Ware vessels are typically bowls with a thick black exterior slip, and an interior decorated with a range of motifs in black or brown paint. These interior motifs include bands, cross hatching and/or loops around the lip, hanging pendant triangles and/or wasted lines. Between these elements appear examples of a variety of zoomorphic figures, including caprids, cranes and dogs. In contrast, the SKT 'B' Ware types are typically storage vessels that have geometric motifs around the neck and slurry applied to the exterior (Khan et al. 1991: 39). The use of applied slurry is a specific technological choice that probably served a functional purpose, potentially related to the need to improve the thermal properties of vessels used for cooking and/or water storage. Examples of a distinctive Red Ware were also recovered with 'A' and 'B' Wares at Sheri Khan Tarakai (see Khan et al. 1991: 46).

It was initially thought that the SKT phase 'A' and 'B' Wares found at sites in the Bannu Basin were a more or less isolated and unique variation of the Neolithic ceramic assemblages known from other areas in the borderlands. However, the discovery of visually indistinguishable material at the site of Jhandi Babar A, which lies 90 miles to the south in the Gomal Plain (Rahman 1997; Swati and Ali 1998), has shown that the SKT 'A' and 'B' wares were considerably more widespread (Khan et al. 2000a; 2000b; Ali and Khan 2001).

The SKT phase material has decorative parallels with material from Mehrgarh (III), Kili Gul Muhammad (II-III), Sur Jangal (I-II), Rana Ghundai (I-III) and Periano Ghundai (see Khan et al. 1991: 39; Shaffer 1992: 454). The SKT Phase material is notably different to Neolithic wares from Central Asia. This suggests that the strongest correlations for the Bannu SKT ceramic assemblage are with Balochistan. It is also notable that storage vessels similar to 'B' Ware (with decoration around the neck and applied slurry) have been found at Rana Ghundai, and an example is currently in the collections of the Ashmolean Museum Oxford.

Pilot petrographic and compositional analyses carried out on SKT 'A', 'B' and Red Ware samples from sites in the Bannu Basin, Jhandi Babar A and Rana Ghundai have revealed very specific evidence for the processes of ceramic production and distribution during the SKT phase. The petrographic analysis has shown that SKT 'A' and 'B' Wares were produced using a deliberately added grog temper, which in general is similar to the host fabric. Occasionally the grog fragments themselves contain fragments of grog, emphasising that there was continuity in approaches to the production process. However, in some instances the grog fragments are from a different fabric, suggesting that a range of different fabric types were being crushed up for temper. In contrast to the 'A' and 'B' Wares, the SKT Red Ware has sand inclusions, which implies the use of a completely different production technology, and either indicates that more than one approach to fabric preparation and production was being used, or that these vessels were imported.

A Principle Components Analysis (PCA) of the compositional data produced by a Proton Induced X-ray Emission and Proton Induced GamMa-Ray Emission (PIXE-PIGME) analysis of the same samples has shown that the vessels from Sheri Khan Tarakai appear to have been made from raw materials that are compositionally distinct from those used for the Girdai and Barra Khuara ceramics (see Figure 2b). Also, although the SKT 'A' and 'B' Wares from the Bannu Basin and Jhandi Babar A are virtually indistinguishable in terms of style, form and technology, the Jhandi Babar A vessels appear to have been made from yet another elementally distinct sets of raw materials. Taken together, this data suggests that the material being found at each site is likely to have been made locally, and given that there are elemental differences between the material from the Bannu Basin sites, it is likely that these vessels were the output of a small scale and possibly household based production system. It is nonetheless particularly notable that a similar iconography is shared in the Bannu and Gomal regions, suggesting that there was some mechanism that resulted in the sharing of

particular motifs by potters in the two regions. In this regard, it is interesting that one 'A' Ware sample from Sheri Khan Tarakai is compositionally similar to the samples from Jhandi Babar A, indicating that at least this vessel might have been imported into the Bannu Basin from the Gomal. The Red Ware samples from Sheri Khan Tarakai are compositionally different to the SKT 'A' and 'B' Ware samples (shown at top right in Figure 2b), and are also distinct from the Red Ware from Rana Ghundai (indicated by arrows on right side in Figure 2b), suggesting that each of these were made using raw material sources that are yet to be characterised effectively.

The Tochi-Gomal Phase

Subsequent to the SKT phase, a marked stylistic and technological shift is evident in the ceramic assemblages at sites including Lak Largai, Lewan and Ter Kala Dheri in the Bannu Basin, and at Gumla (II), Rehman Dheri (I), and Jhandi Babar A and B in the Gomal Plain. The continuation of the apparent decorative, morphological and technological connections between the two regions has led to this period being referred to as the Tochi-Gomal Phase (Khan et al. 2000c). This Tochi-Gomal Phase is marked by the appearance of an assemblage of finely made ceramics, which are decorated with striking polychrome decoration in brown, black, red and/or white that commonly shows geometric patterns of cross hatching, linear motifs, and a variety of other abstract forms (see Figure 3a). These vessels are made from a fine buff ware that either has no visible or fine sand inclusions, which is similar to the fabric used for SKT Red Ware. The most common forms are bowls with open mouth and straight sides, or carinated bowls. As they have not been subjected to a decisive technological study, it is not yet clear whether these vessels were coil made and then slow turned, or whether they were wheel thrown from scratch. Courty and Roux (1995) have shown that it is possible for a skilled craftsperson to produce what might easily be assumed to be a wheel thrown vessel by using slow turning. This suggests that it is entirely possible that the Tochi-Gomal Phase ceramics may have been coil made and then slow turned to an extremely fine finish. This is not however definitive and clear conclusions await a specific technological study.

The shift to the production of fine turned vessels nevertheless represents a marked technological change away from the hand made SKT Wares, which is very much in line with the relatively sudden and widespread appearance of regionally distinct polychrome decorated vessels at sites in Balochistan, Seistan and parts of the Indus Valley (Durrani and Wright 1992: 153). Petrographic analysis has shown that the Tochi-Gomal ceramics from the Bannu region were manufactured from either naturally very fine or levigated clay.

A PCA of the PIXE-PIGME compositional data from the Tochi-Gomal phase samples shows a more distinct separation of the samples into groups (see Figure 3b), one dominated by material from Lak Largai (marked Bannu Basin 1 in Figure 3b), one from material from Ter Kala Dheri (marked Bannu Basin 2 in Figure 3b) and the last by material from Jhandi Babar A (marked Gomal Valley in Figure 3b). This again implies that most production was taking place locally and it should be pointed out that there is a great deal of variety in the decorative motifs that are used, which remains a subject for further study. The predominance of fine wares and the refinement of many of the vessel forms suggest that there may have been increasing shifts towards a specialised production of these vessels, although it is not clear on what scale this production might have been organised. There also appears to have been some trade in finished vessels, most notably with the two samples from Lewan (shown as Grey Diamonds in Figure 3b), which cluster with those from Jhandi Babar A, implying that some material from Lewan might have been imported into the Bannu Basin.

The Kot Diji Phase

Following the Tochi-Gomal phase is a clearly defined Kot Diji horizon, which is present at sites such as Lewan, Islam Chowki and Tarakai Qila in the Bannu region and at Gumla and Rehman

Dheri in the Gomal. These Kot Diji ceramic vessels closely resemble forms that are distributed widely across the Indus Valley and into a number of borderland areas (see Mughal 1970; Shaffer 1992). As such, they are relatively homogenous in most decorative, morphological and technological aspects, and show signs of standardisation, which all suggest that they were the output of specialised potters (see Figure 4a).

The discovery of a Kot Diji period kiln at Lewan in 2000 provides first hand evidence for the production of this type of material at the site. Petrographic analysis shows that a standardised sand tempered fabric appears to have been used. A PCA of the PIXE-PIGME compositional data shows that despite the similarity of the fabrics, as many as three elementally distinct sources of raw materials appear to have been used to produce Kot Diji vessels in Bannu, one of which was presumably close to Lewan (see Figure 4b). This indicates that although these vessels appear to have been produced by specialist potters, there were several production locales within the basin. Interestingly, vessels from one or more of these sources appear at individual sites, which also suggests that there was some form of elaborate system of ceramic distribution in operation in the Bannu Basin at this time. It is not yet possible to establish if specific vessels were produced at specific sites.

Although there is evidence for continued occupation into the later 3rd millennium BC in the Bannu Basin, no evidence for Harappan period occupation has yet been discovered in the Bannu Basin. Such evidence has however been discovered in the Gomal, particularly at the recently excavated site of Ghandi Umar Khan (Ali 2005; for location see Figure 1). This suggests that at some point in the Kot Diji phase, the inhabitants of the Bannu and Gomal regions begin to follow divergent cultural trajectories - while the inhabitants of the Gomal appear to have become integrated into the Harappan cultural system in some way, those of the Bannu Basin persist with using the Kot Diji cultural assemblage (see Thomas et al. 1997), which is a situation that is also paralleled in the N.W.F.P. at Sarai Khola (Halim 1972; Mughal 1970).

Early and Middle Historic Ceramic Production

The Iron Age (Early Historic) Phase

At present, no occupation has been discovered in the Bannu region that can be dated to the period immediately after the Kot Diji Phase, which has been shown to be contemporaneous with both the Kot Diji and the Harappan periods in the Indus Valley proper. The next clearly dated occupation is the Iron Age levels identified at Ter Kala Dheri and Akra. From c.900 BC, a distinctive black painted red ware appears to have been used in the Bannu Basin. Referred to as Bannu Black on Red Ware, this ware is distinct from contemporaneous wares in use to the north and south. It is also the distinctive ware associated with the major phase of occupation in Area B at the urban site of Akra (see Figure 5a). This ware appears to be primarily hand made, and is decorated with simple bands, cross-hatching, and a range of other geometric motifs. In addition, there is also a plain red coarse ware that was used to produce hand made storage vessels. It is difficult to characterise the nature of the ceramic production system that created these vessels. The fact that they are essentially hand made and quite distinctively decorated would suggest that they were produced by a household based production system, but this seems unusual for an apparently urban site. Interestingly, the best parallels for this material are not found within South Asia, but with the Yaz Depe I material from the Murghab in Central Asia (see Magee et al. 2005). Although most examples of the Bannu Black on Red Ware display a similar and relatively simple range of decorative motifs (see Figure 5a), they appear to have been made from at least two ceramic fabrics – one that is chaff and mineral tempered, and another that has smaller quantities of mineral temper. The coarse ware appears to be grog tempered, which is a markedly different fabric preparation technique. This suggests that there

is a degree of underlying complexity in the ceramic production system, where specific fabrics are being favoured for specific vessels.

A PCA of the PIXE-PIGME compositional data from a selection of samples of Bannu Black on Red Ware have shown that the material recovered from stratified deposits at Akra appears to have been made using two elementally distinct sets of raw materials, and these correspond to the two petrographic fabrics that were identified (see Figure 5b). It has not yet been possible to establish whether there was a correlation between the elementally distinct ware types and the decorative motifs on the surface of the sherds. However, material from two distinct sources was being found at Akra, and material from each source has been found in each excavated area of the site, suggesting that a relatively complex system of distribution was in operation at the site during the Iron Age. This fits with Akra's status as one of the largest sites in the North West Frontier at this time.

Subsequent to the occupation marked by the Bannu Black on Red Ware assemblage, there is evidence for the appearance of a distinctive assemblage that includes examples of what have been described as Iranian inspired sherds, which have good parallels with material from Achaemenid period occupation at sites in Afghanistan and Iran (see Magee et al. 2005). Unfortunately no scientific analysis of this material has yet been undertaken.

The Hindu Shahi/Ghaznavid (Middle Historic) Phase

After the evidence for Achaemenid Period occupation at Akra, there is a significant gap in our knowledge about the inhabitants of the region. Excavations at Akra in 2000 exposed a fortified structure that has been dated to the final years of Hindu Shahi rule (c.AD 900) and continued to be occupied after the conquest of the frontier by the Mahmud of Ghazni in AD 1000. The ceramic assemblages that were in use at Akra at this time (see Figure 6a) share affinities with vessel forms that have been excavated at sites in the Peshawar and Swat Valleys, at Tulamba in the Punjab, and at sites in Balochistan (see Petrie 2002, 2005). However, the combinations of decorative schemes have not yet been paralleled elsewhere.

Petrographic analysis of samples from the excavated assemblage has shown that there were a number of distinct ceramic fabrics made from different sets of raw materials being used at Akra simultaneously during this period. This is complemented by PCA of the PIXE-PIGME compositional data, which suggests that the fabrics used to manufacture the vessels that were found in the same area of the site, were being produced from at least two but perhaps three elementally distinct sources of raw materials. This has been interpreted as evidence for the existence of a complex production and redistribution network for ceramic vessels within the basin in the 10^{th} and 11^{th} century AD, which contradicts that assumption that the region had been completely laid waste by Mahmud in AD 1000 (Petrie 2002; 2005).

Conclusions

The analysis of the ceramic assemblages that were in use during the different periods of Late Prehistoric and Historic occupation in the Bannu Basin has shown that there were a number of significant developments in the processes of ceramic production and distribution in the region. In general, there is a trend away from household production towards the use of the wheel and increased standardisation of vessel forms and fabrics throughout Late Prehistory, which suggest that there were distinctive shifts towards craft specialisation and fits with developments taking place in the Gomal Plain and also in Northern Balochistan during the same time period. However, beginning with the later Kot Diji Phase occupation, the Bannu region appears to have become somewhat isolated from the cultural assemblages being used in neighbouring regions. This is particularly notable when comparing Bannu with the Gomal, as the two regions appear to share parallel developmental trajectories up to the Kot Diji Phase, but then the Gomal becomes absorbed into the

Harappan sphere, whereas the Bannu Basin does not. This isolation is also evident in the Iron Age, where the typical ceramic assemblage used in Bannu is distinct from the other known South Asian assemblages, and actually most resembles material from Central Asia. At the end of the 1st millennium AD, ceramic assemblages that are distinctive from the other known South Asian assemblages are also being used in the Bannu Basin. Although more work remains to be done, it is tempting to speculate that the distinctiveness of the cultural assemblages that were in use, which progressively becomes more marked, is a product of both the geographical and cultural context of the Bannu Basin, particularly in terms of its location in the borderlands between the lowlands of South Asia and the highlands of Central Asia.

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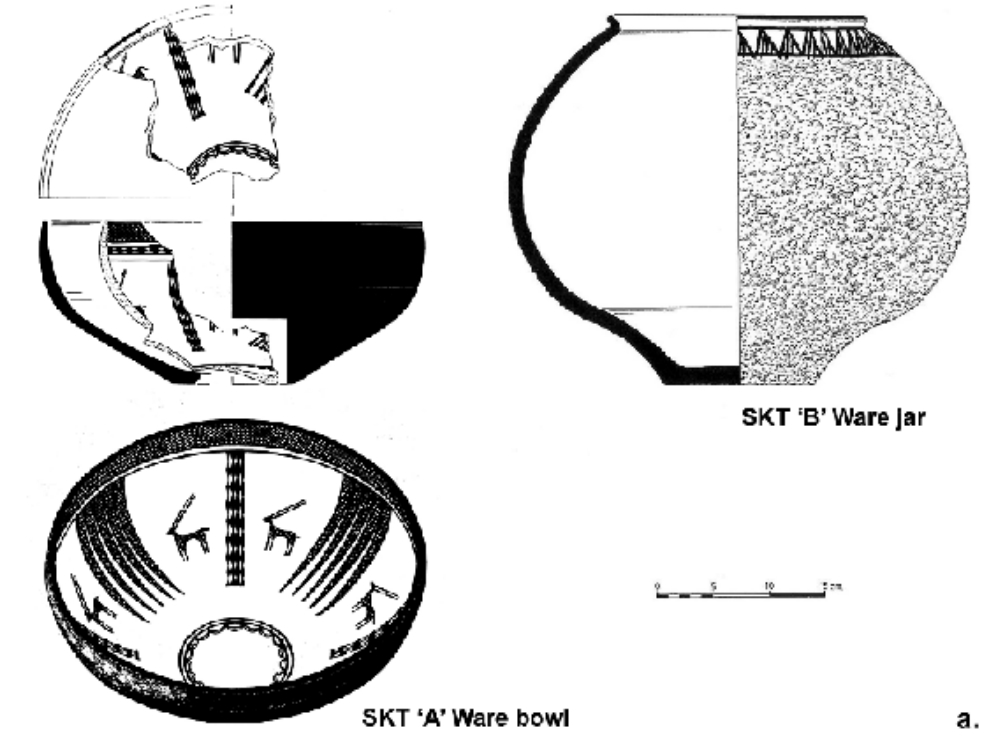
Figure 1 – Landsat 7 image of the Indus Valley and the Sulaiman Range, and an enlarged view of the Bannu Basin and Gomal Valley regions, with the locations of a number of major sites discussed in the text indicated.



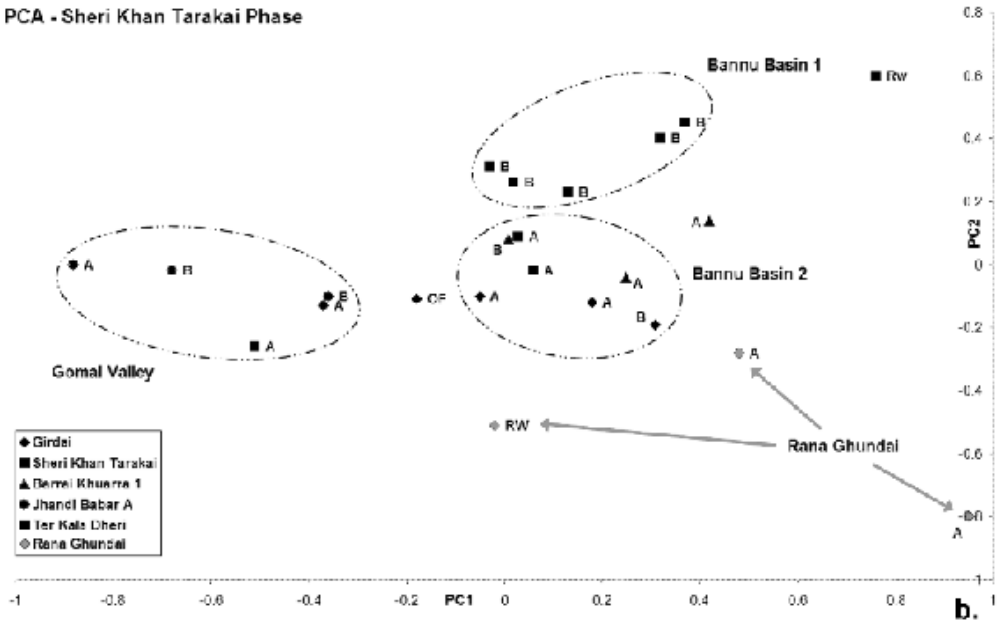
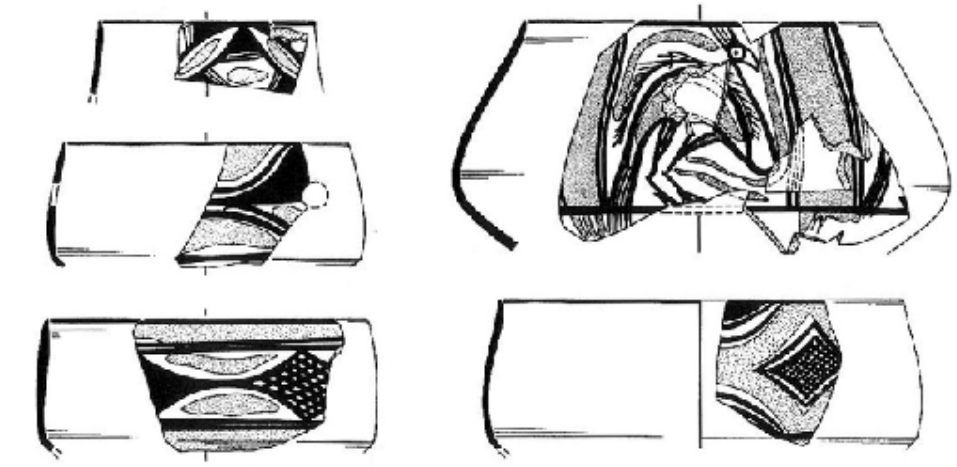
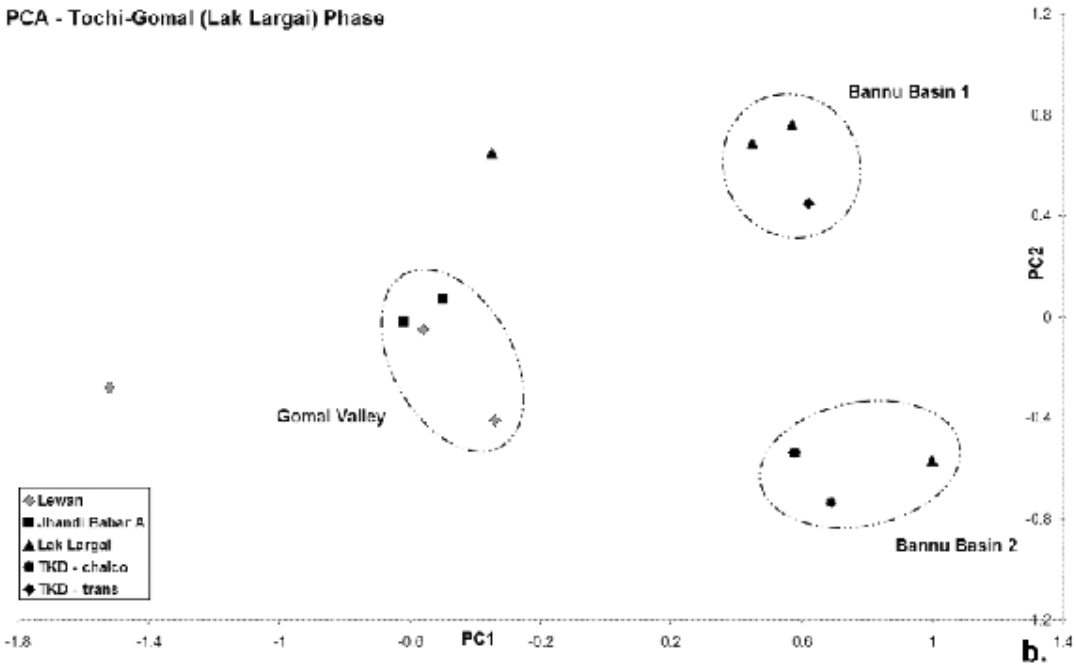


Figure 2 – a. Drawings of representative SKT Phase 'A' and 'B' Ware ceramic vessels from Sheri Khan Tarakai (after Khan et al. 1991: Figs. 34 and 42); b. PCA plot of SKT Phase ceramic samples from Bannu Basin and Gomal Valley sites.



a.



b.

Figure 3 – a. Drawings of representative Tochi-Gomal Phase ceramic vessels from Lak Largai (after Khan et al. 1991: Fig. 17); b. PCA plot of Tochi-Gomal Phase ceramic samples from Bannu Basin and Gomal Valley sites.

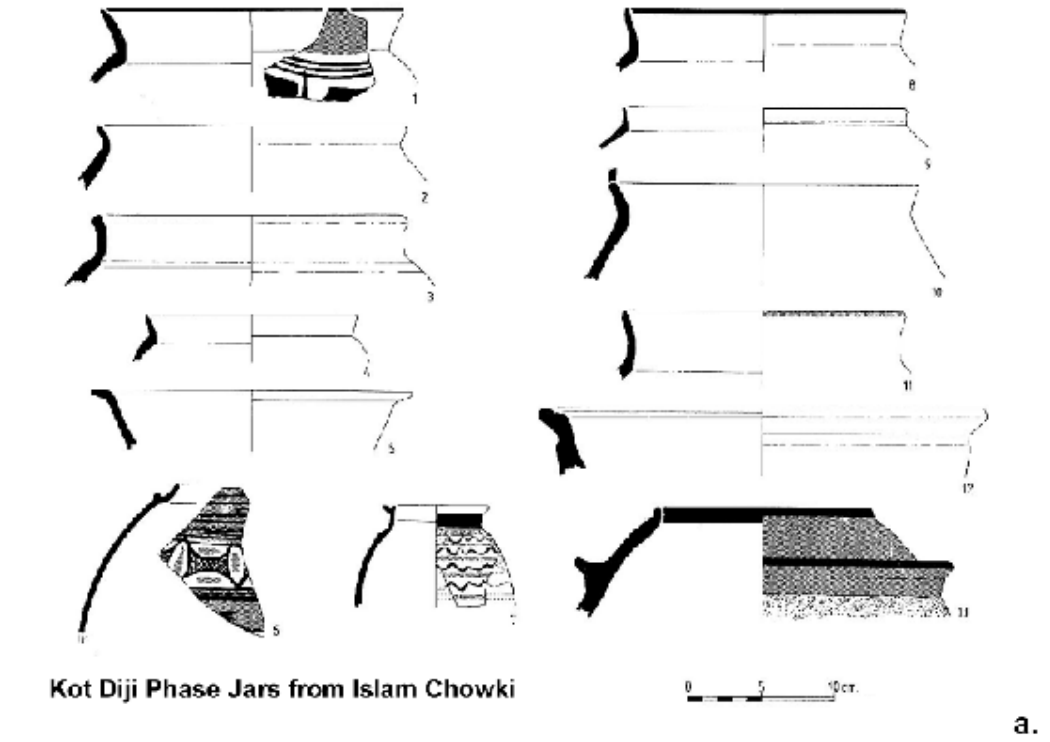


Figure 4 – a. Drawings of representative Kot Diji Phase ceramic vessels from Islam Chowki (after Khan et al. 1991: Fig. 8); b. PCA plot of Kot Diji Phase ceramic samples from Bannu Basin and Gomal Valley sites.

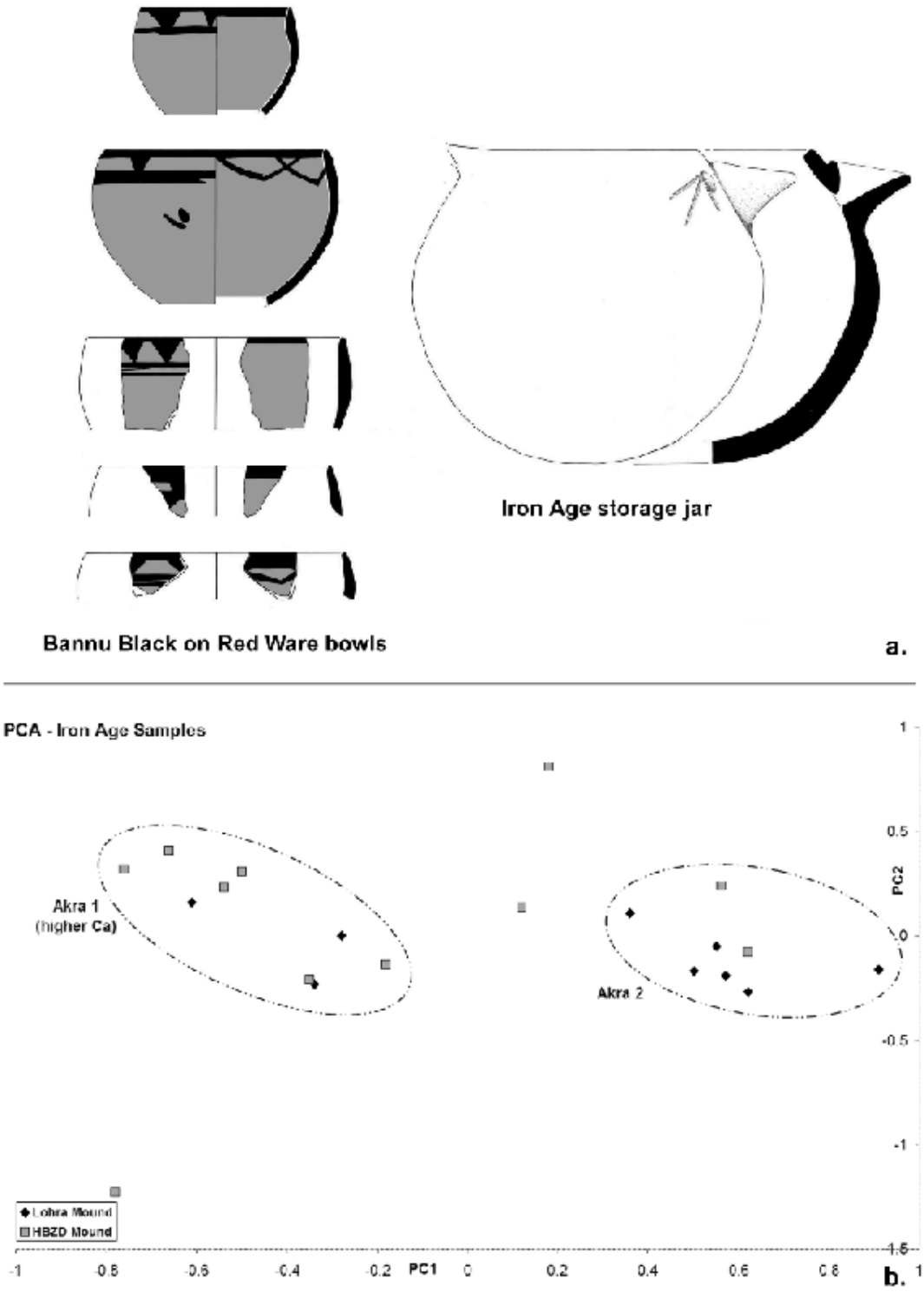
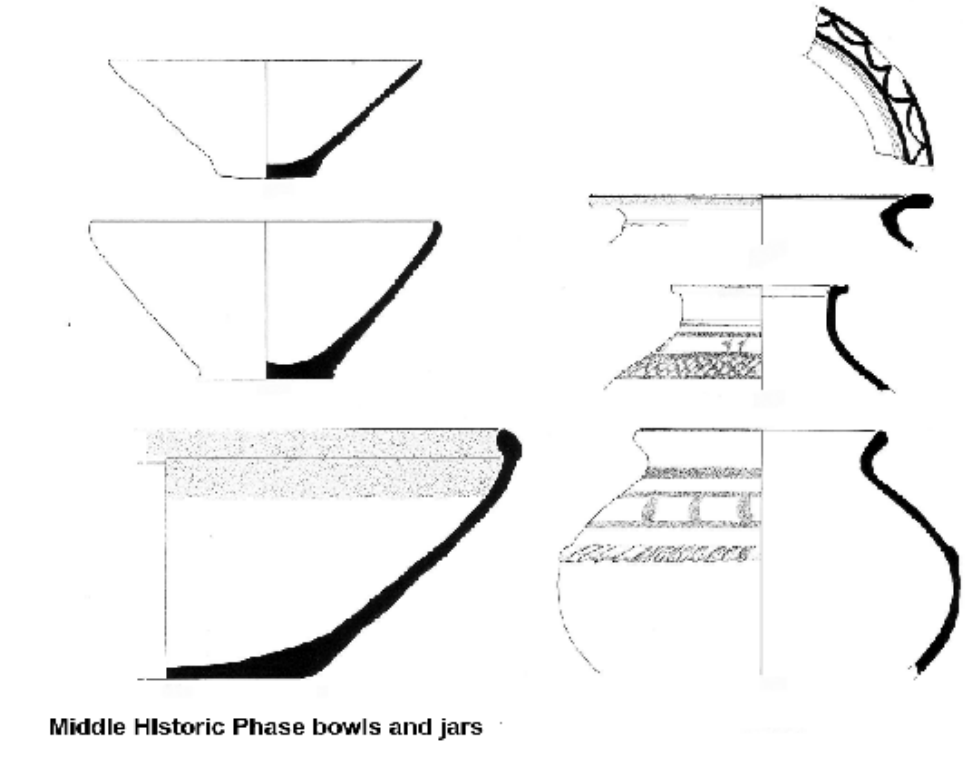
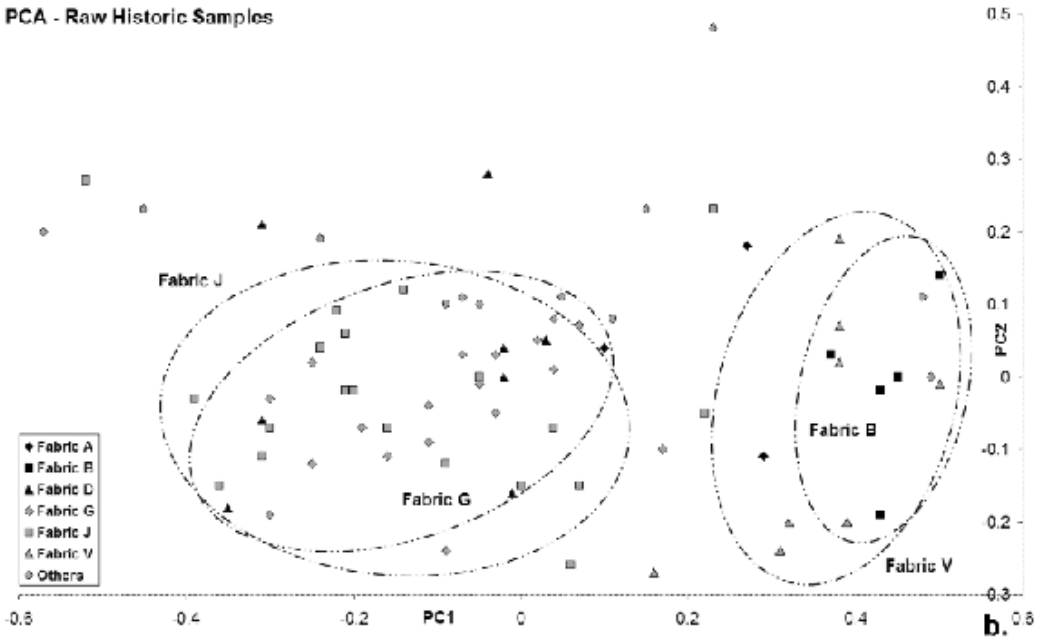


Figure 5 – a. Drawings of representative Iron Age Phase ceramic vessels from the Lohra and Hussaini Boi Ziarat Dherai mounds at Akra (after Magee et al. 2005: Figs. 17 and 19); b. PCA plot of Iron Age Phase ceramic samples from excavations at Akra.



Middle HIstoric Phase bowls and jars

a.



b.

Figure 6 – a. Drawings of representative Middle Historic Phase ceramic vessels from the Hussaini Boi Ziarat Dherai (after Petrie 2005: Fig. 1); b. PCA plot of Middle Historic Phase ceramic samples from excavations at Akra.