

Negligible Details? On a Study of Terracotta Miniature Carts from a Harappan site in Gujarat

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Abstract

This paper deals with results obtained from an analysed assemblage of Harappan toy- or model carts. It aims to put forward the particular value of studying a limited number of objects while concentrating on details. It further prefers to approach the items not primarily as representations of full-sized carts, but as that what they are; that is, miniature carts.

Introduction

Mini-sized cart frames and wheels in terracotta constitute a common Indus or Harappan feature, found on various Harappan sites. These are in general viewed upon as toys or models, representing full-sized carts believed to have existed during Harappan time similar to bullock carts in use today by farmers throughout Pakistan and India. Hence, they are traditionally put in connection with farming, but also with the carrying of goods (e.g. Kenoyer, 2000: 89 and 2004; McIntosh, 2002: 45 and 2000; Ratnagar, 2001: 56 and 2006: 238ff).

Except for a morphological description of the Harappan toy- or model cart that renders it rather uniform in appearance, or a portrayed cart of 'typical' model (sometimes accompanied by a note on their similarity with the full-sized carts of today; see e.g. Wheeler, 1966: Figure 62), these items have by established archaeology generally not been bestowed with any deeper consideration. More attention has been given to the few finds of miniature carts in bronze/copper (Kenoyer, 2004: 96; see e.g. Wheeler, 1968: 92). More recently, though, this indifference has been criticised and the presupposed uniformity of the carts objected to (Kenoyer, 2004).

This paper aims to present and discuss the results of an analysis of a small assemblage of Harappan mini-sized cart frames in terracotta, originating from the coastal, Classical Harappan settlement at Bagasra in Gujarat. These items have previously been dealt with in

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connection with their traditional identification as toys. However, this will not constitute the primary focus of this account. While any deeper concerns as to toys/ritual objects will be put aside, the ambition is rather to focus upon some interesting aspects found in course of the analysis, such as indices of regular features. With this, the aim is to highlight the contributions to archaeological inquiries that can be obtained from the study of a *limited* assemblage, followed by carefulness for details. While discussing the significance of the results, the paper further strives to reflect upon the objects as that what they constitute by themselves mini-sized carts instead of handling them solely as signs for the existence of full-sized carts.

Before presenting the area of research and the successive results of the analysis, the account will start with a brief summary of some further notes on Harappan carts, including a recent analysis of fragments of model cart frames from the site at Harappa. This will give a contextual background of interest for the study.

The Harappan carts

In an article that specifically emphasizes the appearance and significance of the (full-sized) Harappan carts, Kenoyer (2004) objects to the traditional neglect of these within Harappan research. The marked variety of models is particularly put forward, including the account of an analysis of cart frame fragments from mini-sized carts originating from the site at Harappa. As is reported, about 2800 fragments belonging to the Middle (or Classical) Harappan period have been classified into eight main types (with a more detailed, stylistic analysis still to be undertaken), aimed at a systematic investigation on quantity and stylistic qualities (Kenoyer, 2004: 100). The by far most common of these types describe two variants of open-framed carts. The first is described as a 'cart with open frame and rectangular plan drawing' (1737 fragments) (Fig. 1), while the second constitutes a 'cart with open frame and concave-shaped short sides' (722 fragments) (Fig. 2).

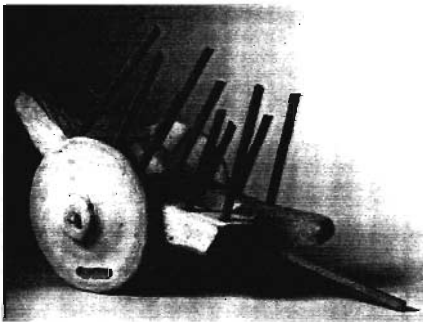


Fig. 1: Reconstructed Harappan model cart of the type with open frame and rectangular plan drawing (after Poster, 1986: Color Plate 1).



Fig. 2: Reconstructed Harappan model cart of the type with open frame and concave-shaped short sides (after McIntosh, 2002: Color Plate 5).

The former is put forward as widely distributed, appearing at almost every Harappan site. In contrast, the latter is mentioned so far only to have been found at Mohenjo Daro, Harappa and possibly Lothal. Described as the most simple frame (proposed as the 'original' one), the 'flat cart with closed frame' is furthermore noted from a number of sites (e.g. Lothal, Nausharo, Shortugai) (Fig. 3). Simultaneously, though, only 12 examples of this type have been found at Harappa (Kenoyer, 2004: 96, 100f, *my translation of type descriptions*). As can be distinguished on the reconstructed models, these cart variants display rectangular, straight or more or less curved shapes with four or, in case of the examples with open frames, sometimes six holes along their sides/side-beams for vertical, wooden poles to be inserted. A further hole for the shaft appears on one of the short sides of the type describing a closed frame, while on reconstructions of carts of the open type a shaft is sometimes seen passing through the half or even the total length of the frame (through its cross-beams; see e.g. Kenoyer, 2000: Cat. no. 45).

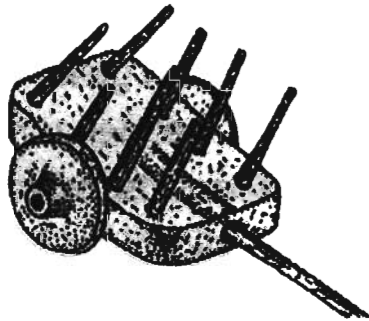


Fig. 3: Reconstructed Harappan model cart of the type with closed frame (after Kenoyer, 2004: Figure 6.4).

One way of fastening the axle-tree was probably similar to a construction suggested for an open-framed cart from Nausharo, on which the vertical poles placed at the centre “/.../could be extended below the frame to hold the axle.” (Kenoyer, 2000: Cat. no. 45). Another option seems to have been provided by a bit of clay that was punched through and added separately onto the underside of the frame (P. Ajithprasad: personal communication 2004) (such construction is indicated in Figure 2). The Harappan carts are assumed to have been of a two-wheeled construction, and similar to the bullock carts of today to have been drawn by two draught animals (bullocks) (Kenoyer, 2004: 97f; Ratnagar, 2006: 240; Sharma and Sharma, 2003: 57). As is indicated by the numerous finds of model wheels, these were probably of a solid constitution (Ratnagar, 2006: 238ff), though signs of spoked wheels have been pointed to as well (Kenoyer, 2004: 90). Similar to today's full-sized carts in Sindh, Pakistan, the wheels have been suggested as probably joining the axle-tree so that they rotated as a single unit (Kenoyer, 2000: 89).

Apart from these types, other variants consist for example of two-parted frames, of hollow or vessel-shaped frames, etc. (Kenoyer, 2004: 102f, Figure 6; Ratnagar, 2006: 240; see also Chakrabarti, 2004: figure 18; Saeed, 1998: 28; Sharma, 2003: PL 44). In a recent account that deals with trade and encounter on a broader geographical scale, encompassing various cultures of Western Asia and South Asia during the Bronze Age, Ratnagar (2006)

mentions in the chapter on means of transport that about six main types of the Harappan cart can be distinguished. An interesting contribution to the enigma of the Harappan carts can lastly be suggested from the reflection that since no

/.../ types occur in the Gujarati sites which are not represented at Mohenjo-daro, Chanhu-daro, or Harappa/.../, there is no evidence for regional variation of cart types (Ratnagar, 2006: 240).

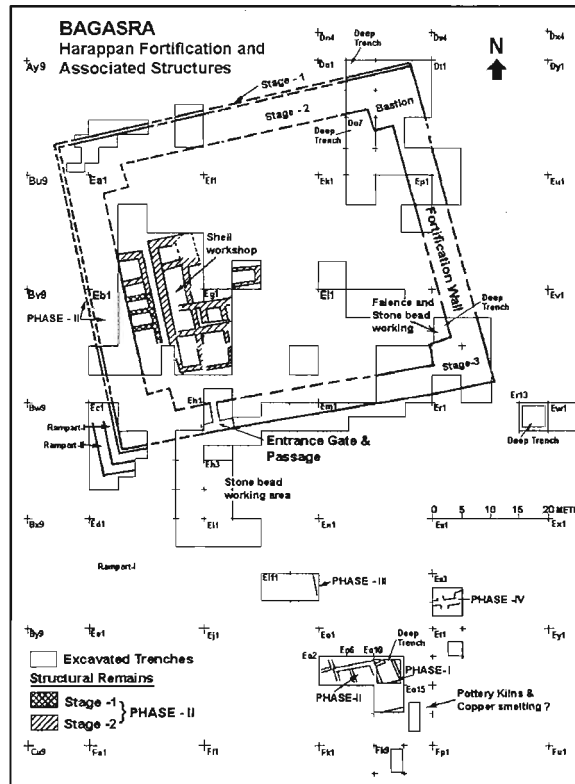


Fig. 4: Layout of the site at Bagasra with excavated trenches (1996-2004) (after Excavations at Bagasra 2003-2004: A Preliminary Report (unpublished), used with kind permission from the Dept. of Archaeology and Ancient History, Maharaja Sayajirao University of Baroda). A proper gate has later (2005) been revealed in the eastern part of the wall.

Bagasra a Harappan settlement in the heart of Gujarat

The small assemblage of cart frame fragments that are in focal point of this study originates from the site at Bagasra (160 x 120 m), a relatively small, Classical Harappan settlement with distinctly urban features (Sonawane *et al.*, 2003) (Fig. 4). It is located not far from the Gulf of Kachchh (Kutch) in today's Indian state of Gujarat, which together with

parts of Maharashtra constituted the southeast 'fringe' of the vast area encompassed by the Harappan cultural complex (for notes on geographical extension, see e.g. Chakrabarti, 2004: 7; Jansen, 2002: 105; Parpola, 1986: 399). The site displays four phases of occupation. Phases I-III belong to the urban Harappan period (c. 2500-1900 BC), while the fourth constitutes a Post-Urban Harappan phase (c. 1900-1700 BC). Classical Harappan features include finds such as steatite seals and beads of semiprecious stone, 'Red Ware' and 'Buff Ware', mud brick structures following a systemic layout, etc. Besides, the site exhibits signs of both of the regional Chalcolithic 'Sorath Harappan' and 'Anarta' traditions as well (one of the particular goals of the excavations has been to trace the stratigraphic context of these different Chalcolithic elements; Sonawane *et al.*, 2003: 21). An impressive wall that was built and twice rebuilt during the prosperous phase II encircled the northern part of the settlement. At its largest, its base measured 7.75 m while its height may have been about 5 m. Apart from a subsistence pattern probably based on agriculture, stock-raising and exploitation of mammal and marine fauna, the settlement clearly indicates traces of craft activities probably conducted on an industrial scale. The most prominent appears to be a shell working industry, followed by stone bead production. Faience production seems to have been present as well. On the basis of its location at the intersection of the three geo-cultural regions of Kachchh, Saurashtra and North Gujarat, the settlement is assumed to have formed an important link in cultural interactions (Sonawane *et al.*, 2003).

The assemblage of cart frames

Fragments of cart frames have been found all over the settlement. The majority belong to phase II (c. 2400-2100 BC), while they totally disappear in phase IV (Artefact book of Bagasra excavations, 1996-2004; Sonawane *et al.*, 2003: 46f). They show up in two different variants that, generally speaking, conform to two of the main types presented in connection with the cart frame material from Harappa: the 'flat cart with closed frame' (here mentioned as 'solid'), as well as the 'cart with open frame and rectangular plan drawing' (here referred to as 'perforated') (Fig. 5).

The assemblage of cart frames that were subjected to the analysis constituted nearly all examples that were found from the first field season in 1996 up to and including the excavation of 2004 (with the finds of the last field season in 2005 excluded). In total, the collection consisted of 43 fragments. Since two fragments were found to belong to one and the same frame, and two other fragments to another frame, the number of cart frames thus counted 41 (since, except for these two 'pairs', each fragment appeared to represent a different frame). Of the 41 objects, the majority, 26 items, were of the solid type, while 15 produced the perforated form. Only one example, of solid type, showed up as complete. Both solid and perforated frame fragments appeared in different sizes and constitutions, either with or without traces of slip and decorative patterning but generally in what seemed a quite 'worn' constitution. Since a number of both solid and perforated frames exhibited a slightly upward curvature, and/or (in case of the solid items) a quite rough or broken underside, and/or (in case of the perforated items) a more smooth or more flat upper side, it became possible to distinguish upper from underside.

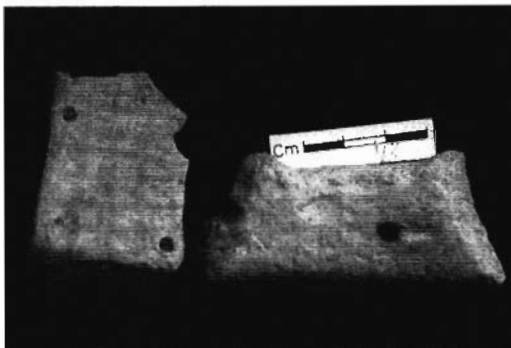


Fig. 5: Fragmented cart frames of the assemblage from Bagasra. Left: fragment of solid type of frame. Right: fragment of perforated type of frame (photograph by the author).

The settlement has yielded a number of model wheels in terracotta as well. Though these were not subjected to any detailed analysis similar to the cart frames, a few words must nevertheless be spent on them. They were of a solid constitution and appeared in a variety of sizes and grades of thickness. A number constituted the type given a hub. On some examples, traces of painted pattern still to be seen exhibited stripes radiating out of the centre. It is notable that this pattern was in some cases painted on the flat side, in other cases on the side with the hub (preliminary study of toy interpreted artefacts, undertaken by the author at the Maharaja Sayajirao University of Baroda, April 2004). The fact that the cart frames and the wheels not necessarily seemed to have been found in close vicinity of each other constitutes another interesting feature (P. Ajithprasad: personal communication 2004).

In course of the analysis, various variables or properties of the cart frames were picked out to be studied more closely (this followed a notice made at the start that a simultaneous existence of both differences and similarities of various properties could be seen among the items). These focused upon: size and general appearance; spatial distribution (according to relation to the wall and the cardinal points); presence of slip and decorative patterning; distribution and sizes of holes (diameter); thickness measures (short side and long side for solids, upper side and long side for perforated); state of preservation. Every property was considered in relation to the previous, as well as to spatial distribution.

Summary of results

(omitted items, due to lacking the property in question, are shown in brackets)

Size and appearance

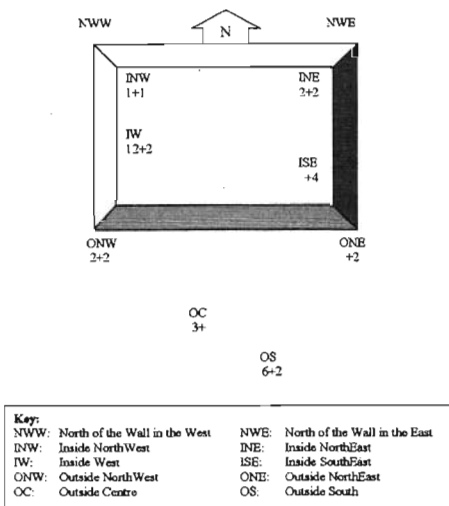
The solid items describe in a more or less fragmented state the rectangular shape of this type. Width measures appear to range between approximately 30-45 mm. Postulated length sizes range between about 40-85 mm. The corners generally appear a bit rounded off. A large number seems to produce a markedly narrow width in relation to assumed length measure. A few examples display in contrast a wider appearance, as well as a more finely cut and straight form. The corners of these items further produce a sharper form than the average.

The fragments of the perforated cart frames are of a thicker constitution than the solid ones. Due to their fragmented states, these are more difficult to evaluate as to size and appearance. The relative thickness of the beams seems however in general to suggest a larger size of the perforated cart frames compared to the solid ones.

Whether solid or perforated, the items seem to be made from the same type of clay, quite light in colour and well fired.

Spatial distribution

The majority (14) of frames cluster in the western part of the enclosed area (IW) and second most (8) in an area along the southern limit of the settlement, outside the wall (OS). Most of the solid cart frames (18) originate from these areas. The perforated examples mainly (6) group around (inside and outside) the southeast corner of the enclosed area (ISE and ONE) (Fig. 6).



- Fig. 6: Schematic picture of spatial distribution of cart frames at Bagasra, according to the wall and the cardinal points. The digit before + designates number of solid items and the digit after + designates number of perforated items.

Presence of slip and decorative patterning

On the basis of presence or absence of slip and/or decorative patterning, the cart frames can be divided into five groups. A majority (30) lack traces of decorative pattern. 7 items of solid type and 4 items of perforated type (both with and without slip) display pattern. The most common type of pattern consists of a hatching in red paint producing regular squares that cover the upper side. Marked variations occur simultaneously, such as incised patterns, white-coloured squares, red dots in each square (see Fig. 5, left item, again), painted stripes etc. (Fig. 7).

Spatial Distribution	Pattern							
	Red squares	Red squares with red stripes	Red squares & red dots	Red pattern	Dark-brown squares	White squares	Red cross with red & brown stripes	Incised pattern
Inside W						1 solid	1 perf	1 solid
Inside NE		1 solid						
Outside NE	1 perf							
Outside S	1 solid	1 solid	1 solid	1 solid	1 perf			1 perf

Fig. 7: Variants of decorative pattern related to spatial distribution, solid and perforated types of cart frames.

Distribution and sizes of holes

The holes supposed for holding the vertical poles are in general punched from the upper side, passing through to the underside.

Solid frames: a 'hole scheme' can be distinguished that produces a large hole in every corner of the upper side, and six smaller holes in two parallel rows across the centre part of the upper side (Fig. 8) (though the 'hole scheme' naturally cannot be concluded with certainty for each item since we have no knowledge of their lost parts, all items with 3 exceptions can, as far as their remaining parts tell, be supposed to fit into the picture that is fully exposed by the single frame of complete appearance). Most items (23, with 1 item omitted) display a big hole size of 5 or 3 mm and/or a small hole size of 3 or 2 mm. This further enables the establishment of three different hole size relations (including 14 items, with 10 items omitted due to lack of measurable holes):

1. Big hole 5 small hole 3 mm (8 items)
2. Big hole 5 small hole 2 mm (4 items)
3. Big hole 3 small hole 2 mm (2 items)

On one of the short sides, a further hole appears which we may assume as intended for the shaft. The depth of this hole ranges between about 5–10 mm. The items displaying big hole sizes of 5 mm in general produce a shaft hole that is 5 mm in diameter. The items with big hole sizes of 3 mm generally exhibit a shaft hole size of 3 mm.

Perforated frames: due to the fragmented state, a specific plotting of holes is not possible to determine. On the basis of constitution and the possibility to distinguish upper- from underside, the holes that can be seen (belonging to a single hole category) generally appear to represent those assumed for holding vertical poles. Most items (9, with 3 items omitted due to absence of holes) exhibit a hole size of 5 mm. Only one single hole can be interpreted as a shaft hole as it appears not on the upper-/ underside, but on the long side of the fragmented beam (which, since both of its ends indicate angles going in two directions, can be concluded

as having constituted one of the cross-beams of the frame in question). The size of this supposed shaft hole is 5 mm.



Fig. 8: The single cart frame of complete appearance, displaying the 'hole scheme' distinguished for the solid type. The hole for the shaft is indicated to the right (photograph by the author).

Thickness measures

Solid frames: a majority displays a short side- and/or a long side thickness of 10 mm (8 and 12 items, respectively, with 4 items omitted). 2 thickness relations can be established: same thickness for both short and long side; short side being 2 mm less thick than long side (11 items in total, with 4 exceptions and 7 items omitted due to lack of one of the measures).

Perforated frames: these are seen to cluster into specific width/thickness intervals (with two items omitted). 2 width/thickness relations can be established: same measure for both upper side and long side; upper side being slightly wider than the thickness of long side (11 items in total, with 2 items omitted due to lack of one of the measures). As a result, the items of group 1 get a more narrow-looking, and thus more finely cut appearance than the objects of group 2. The latter in contrast give a more durable or 'stable' impression (Fig. 9).



Fig. 9: Fragments of perforated type of cart frame exhibiting the two width/thickness measure relations noted for this type. Left: example of relation no. 1. Centre and right: examples of relation no. 2 (photograph by the author).

State of preservation

Solid frames: following a mutual sorting of the items as large-sized, medium-sized, small or fragmented, 13 items turn out as large-sized. As concerns constitution, the items divide themselves as follows (with 2 items omitted due to being too fragmented in shape):

Complete 1 item (though actually of two broken parts, glued together in modern time)

Complete short side 8 items

Corner of short side 11 items

Part of short side without corners 3 items

Part of central part 3 items

(total number of items is 26 since the two frames that consist of not one but two fragments, each display a centre piece as well as a corner piece)

Since we assume the hole on the short side to be intended for a shaft, we may suggest this part of the frame to constitute the front part of the cart. While 18 items display a shaft hole, it follows that a clear majority of items represents front parts. Most of the corner items (7, with 3 items omitted due to being unable to tell) in addition display right-sided corners (possible to conclude thanks to the distinguishing of the upper side from the underside).

Perforated frames: the relative similarity in size does not lead to any sorting of particular significance. In relation to the solid items as well as to the ability to reconstruct the cart frames from the fragments, the items can be considered small in size. Most of them appear to constitute parts of side-beams. Only 3 display markedly different constitutions than average: 1 upward turned item that is suggested as a back- or front end of a frame; 1 item concluded to be a corner piece; 1 item interpreted as part of a cross-beam (as is indicated by its presumed shaft hole and two-directed angles; see above).

Comparisons and connections of properties

Solid frames: when comparing the properties with each other, it turns out that these can partly be connected to each other. With this follows the possibility of internal sortings of the solid cart frame fragments into kinds of 'subgroups':

The abundance of items with decorative patterning within the first two groups of hole size relations as well as within the two thickness relations are relatively higher in comparison to the items lacking pattern (Fig. 10). The patterned items are furthermore generally larger in size whereas the smallest items mostly lack both slip and decorative pattern.

Fragments displaying short- and/or long side of 10 mm thickness mainly display big hole size of 5 mm. In contrast, items with short- and/or long side of 7 mm thickness show big hole size of 3 mm.

The hole sizes of the third group of hole size relations can be connected to the frames mentioned to display a more finely cut and straight form, as well as sharper corners than average. None of these frames reveal traces of decorative patterning.

This 'chain of connection' can accordingly be seen to separate the frames with decorative pattern from the items lacking pattern, the former displaying more regularities than the latter. Among the latter, the frames of the more finely cut and straight form constitutes a further subdivision.

Perforated frames: Besides the groups based on presence or absence of slip and/or decorative pattern, the only further subdivision is constituted by the two different width/thickness measure relations. The constitutions of the different properties thus do not appear related to each other in the way that is indicated by the solid objects. Due to the few internal 'subgroups' distinguished, this type of frame gives the impression of being less regulated. The divergence between the two cart frame types can with this be suggested to become the more marked.

		Slip and patterning groups					
Hole size relation [mm]		A Not slipped Not patterned	B Slipped Not patterned	C Poss. slipped Not patterned	D Not slipped Patterned	E Slipped Patterned	Total
1. Big Hole Small hole 3	5	1	2	1	2	2	8
2. Big Hole Small hole 2	5			1	1	2	4
3. Big Hole Small hole 2	3	1	1				2

Fig. 10: Hole size relations related to groups of slip/decorative pattern, solid type of cart frame.

Connections to spatial distribution

A majority of frames showing decorative patterning (6) derive from the southern area outside the wall, near the southern limit of the settlement (OS), and second most (3) from the western part of the enclosed area (IW). However, none of the items painted with red squares are found in the latter area. No patterned items show up in the southeast corner of the enclosed area (ISE) (see Fig. 7 again).

Due to the connections to be seen between the properties among the solid frames, the spatial distribution of the patterned items in turn indicates spatial distribution when considering the other properties. With this, similarities appear between the western area inside the wall (IW) and the southern area outside the wall (OS).

Among the perforated, a second spatial difference, besides the distribution of patterned items, is exhibited by the width/thickness variable, since all items of the first of the two measure relations originate from areas inside the wall.

Indices of regulated features some selected aspects

In sum, then, the analysis can be suggested to reveal indices of internal orderings and regulated features. Considering the limited number of objects taking part in the analysis, one

could perhaps object that any signs of regulated patterns indeed appear rather small and thus quite non-significant. Subtle as they may be though, they at least undermine any thoughts of the carts or cart frames to be either monotonously uniform in appearance, or, in contrast, shaped 'just in any way' (this latter possibly following from their toy identification and the idea of toy materials, as belongings of children's sphere, to be irregularly 'scattered around', as well as shaped in unplanned manners (cf. Ardeleanu-Jansen, 2002: 212; Sofaer Derevenski, 2000: 7)). The indices may accordingly be put forward as well worth some further consideration. Naturally, one could approach these from various aspects. Here, some selected details of particular significance will be mentioned.

The divergence in spatial distribution

Both the two different types of cart frames, as well as the two 'subgroups' constituted by either patterned or not patterned frames of the solid variant, display for us clear divergences in spatial distribution. In this connection, comparisons with the suggested interpretations given to the various parts of the settlement at Bagasra (which are most clear as concerns location of craft activities) turn of particular interest.

The immense wall that once separated the settlement and encircled its northern part constitutes a feature of especial significance for the site, naturally tempting scholars to ask whether there is some sort of difference(s), and in that case of what constitution(s), to be traced between the inside- and the outside areas. The walled area is thought of by the excavators as having possibly housed the manufacturing of more specialized craft activities (Sonawane *et al.*, 2003). The shell working industry is for example found in the western part of the area enclosed by the wall (where most of the solid cart frames but few of the perforated, as well as some of the patterned items are found, as we remember). An assumed faience production is revealed in the southeast corner of the enclosure (from where a few cart frames, and most of the perforated ones, originate, but none with decorative pattern). A row of silos containing pieces of unworked semiprecious stone has furthermore been found in this latter area. Based among others on the absence of traces of bead working adjacent to these, it is assumed that a specific kind of infrastructure was in operation at the settlement, controlling its production and trade by highly specialized as well as spatially segregated craft activities. The silos and their unworked content have thus been suggested to indicate an area that was possibly solely functioning as the place for keeping that is, controlling! the raw material while the actual production was located somewhere else. This has further been proposed for the shell working area, where shell material may have been distributed to workshops located in other parts of the settlement, later to be returned in the form of worked items such as bangles (Sonawane *et al.*, 2003; K. K. Bhan and P. Ajithprasad: personal communication 2004).

Supposing the southeast corner as well as the western part of the walled area as locations for some sort of 'controlling power', one could perhaps assume them to reveal artefacts of special significance, particular quality, etc. May the marked number of solid cart frames within the western area possibly be a sign for this, or the one-sided appearance of the

perforated examples of the first width/thickness measure relation within the walled area? This appears though at the same time dubious in various ways. There are for example no particular similarities to be noted between the cart frames from the western part and the cart frames from the southeast corner, respectively, which one perhaps could have expected. Rather, the two assemblages of cart frames appear as opposites to each other: a cluster of solids versus markedly few, perforated ones, and items with decorative pattern versus items lacking this feature. Instead, the western area displays similarities with the southernmost area, located *outside* the wall, while this latter area at the same time distinguishes itself by housing the largest number of patterned cart frames which is notable if we presume decorative pattern to express higher 'quality', or greater economic significance, due to the extra labour effort needed. The spatial divergences of the cart frames thus do not seem to follow in line neither with the markedly separated craft activity areas, neither with any clearly visible inside/outside divisions.

The traces of the spatial orderings should perhaps better be searched for on other premises. The southernmost area, outside the wall, has on the basis of indices of kiln remains and other features been suggested as the settlement's location for pottery production (Sonawane *et al.*, 2003). Could this be a clue to the link between this area and the western area inside the wall? Do the cart frame fragments point to something that has to do with their way of production? One must though at the same time keep in mind that all cart frames producing red-painted squares belong to the former area, while the latter displays no items with this kind of decorative pattern. However, another essential aspect one most probably must consider concerns the function of the various areas as places for living. Though more difficult to distinguish than the different craft activities, it is perhaps from this rather unknown perspective one should look for clues to spatial divergences displayed by items that for a large presumably are to be connected to the household sphere.

In sum, then, it can at least be concluded that the spatial distribution neither points at, nor supports any too simply drawn demarcations of socially loaded content. One obviously faces something more complex than that.

The clearly distinguished similarities and differences

As is exhibited by the analysis, some of the regulated features display rather marked similarities, which first and foremost could be considered in relation to function. In his analysis of the Harappan cart frames and discussion as to the significance of the Harappan (full-sized) cart, Kenoyer (2004: 96) relates the range of the various cart types to functionally differentiated ways of construction. The solid, or closed, as well as the perforated, or open, types of carts are further suggested for different fields of use. The former type, as it should have been well built for heavy loads, is proposed to have carried goods like stone or storage vessels. The latter, equipped with an open frame that would probably reduce its own weight, is assumed for bulky carryings like straw, firewood, etc. (Kenoyer, 2004: 101). One could thus assume the assemblage of mini-sized cart frames to mirror functional differences: besides the main types of solid and perforated, this may possibly be expressed by the different 'subgroups', identified above (the frames of more finely cut and more straight form,

the items with decorative pattern and hole size- and thickness measure relations, etc.). Furthermore, and to a certain degree, function and durability is of course of importance as concerns the mini-sized cart in itself as well: it must be stable enough, not too fragile for its particular purposes, etc. The manufacturing of the object further decides in the matter. If being of irregularly thick constitution, it would for example crack during the drying process before firing (Gegerfelt and Banner Wahlgren, 1986: 139; Wiberg, 1978: 24).

At the same time, however, one may suggest some features of similarities a bit striking, if only relating them to function: the distinguishing of, in total, four groups of thickness measure relations, the three hole size relations of the solid frames, the recurrently displayed, painted pattern of red squares, etc. Such details as concordance between measures may certainly play an essential role for a full-sized cart. However, for the 'function' of a model, this should logically not play that much importance. If, on the other hand, these aspects would indeed meticulously mirror exceedingly small, functional details of the full-sized carts, this would in itself become interesting. Why would one strive to put that much effort onto a model? Such details as identical hole sizes, or relations between hole sizes and thickness measures, seem in fact to indicate some kind of specialists' work. Features such as these should thus tentatively provide us with essential information as to both the significance of the mini-sized carts, as well as the particular relation of these items to their full-sized counterparts.

The marked variation of (full-sized) cart types is further suggested by Kenoyer to reflect social or ethnic distinctions and local interrelations between different cultural traditions. In this connection, he points to the various cart types in use today in the Indus Valley, where different styles and designs signal the belonging to different communities (Kenoyer, 2000: 89; 2004: 104). With this, the differently looking carts could be taken to act as some kind of 'separators' in line with certain *cultural mechanisms*, emphasized by Choksi in connection with pottery to be comprehended as necessarily prevalent within past settlements, limiting the fusion of local styles and ensuring their continuity (Choksi, 2002: 284). Could this presumably be applicable to the model itself as well, perhaps offering a clue to aspects such as identical measures? May the mini-sized carts, with their regulated features that indeed point at clear distinctions, have acted themselves as separators, signalling and ensuring social/ethnic distinctions? Some scholars have in fact pointed to the significance of common symbols and markers for the formation of social communities and groups (i.e. nations) (see e.g. Rodell, 2002; Zander, 2001: these authors discuss the significance of common symbols such as flags, currency and national epics). Though it is impossible to say to which extent these thoughts can be applied on the cart frames, they may nevertheless give us a hint of possible meanings and purposes of the objects. If following this line of thought, the various 'subgroups', distinguished in the analysis, could thus possibly be taken to express different kinds of (social) strivings and constellations of the particular social structure in operation at the settlement. In turn, this would put the mini-sized carts in an intriguing light as to their particular value and function(s).

The unbalanced state of preservation

As noted, some features of state of preservation appear a bit striking. There is only one complete item, which is actually of a broken appearance too since it consists of two pieces glued together (see Figure 8 again). Most probably, this is to a large part to be explained by 'natural' causes. More difficult to comprehend appears though the circumstance that an overwhelming majority of the broken, solid frames indicate front parts (that is, at least if one presumes the hole supposed for the shaft only to have been punched into one of the short sides; to my opinion, though, this seems reasonable to assume for the solid type of frame). Should we not expect 'natural' breakage to lead to a range of fragmented frame parts to be left? In close connection to this is furthermore the feature telling us that seven out of eleven 'corner' fragments of solid type appear to display a right-sided corner, while only one item can be stated with certainty to produce a left-sided corner. One could tentatively discuss whether this should be seen as a result of accidental destruction, for example through a particular way of utilization that would lead to the cart frames being broken at about the same, rather weak spot. If so, though, where are all the back parts? Why are there hardly any left-sided front corners to be seen? The two halves constituting the complete item, as well as the four fragments originating from frames consisting of two pieces each, appear in fact strikingly unique, since no other fragments have been found to belong to one and the same frame. On top of this, one may lastly add the circumstance that the model wheels, as was mentioned above, cannot be stated as necessarily found in close connection to the cart frames.

Another possibility could be that the frames were purposely broken, following some specific regulations of unknown content. Perhaps could this solution present a clue to the missing 'back parts'? Were these maybe removed consciously, later to be destroyed? In this context, the lack of fragments among the perforated frames displaying holes that could be interpreted as shaft holes could perhaps appear a bit remarkable as well, even though this may probably be linked to the particular shape of the perforated frame. Logically speaking, this type should produce more fragments originating from the side-beams than from the centre parts. When comparing with the number of items of the solid type displaying front sides with clearly shown shaft holes, it may though nevertheless appear as a noteworthy contrast.

On the basis of these aspects of preservation, one may suggest that the different types and subgroups distinguished throughout the analysis simultaneously could represent highly diverse areas of utilization perhaps that much, that the common term toy- or model cart would even become clumsy, or misleading? To repeat, the assemblage produces on one hand the smallest fragments of the solid examples, simultaneously lacking both slip and decorative pattern; on the other the larger examples of the same type, displaying both patterning and regular hole size- and thickness measure relations, as well as the solid frames of more finely cut and straight form, lacking traces of decorative pattern. It furthermore exhibits the perforated types, mostly producing parts of side-beams, while only a few display end- or centre pieces; there are on one hand the 'finely cut' items of this type, on the other the more 'stable' looking examples. Perhaps are we thus both facing objects that were intended

for 'proper' play and similar, 'hard' everyday utilization, leading to marked wear and breakage following accident or particular ways of handling the object, as well as looking at items intended for more 'stationary' purposes (as containers, as more or less symbolic objects, etc.), which possibly would be mirrored in more regular features, more well-preserved constitutions and the like. Rather than comprehending the fragmented cart frames as a homogenous assemblage, it would hence follow that a conscious search for and awareness of distinct subgroups and internal variants would seem a more promising approach, possibly ending in the discovery of significances and uses of markedly diverse nature.

According to Ardeleanu-Jansen (1993: 182ff), Mode objects to the view of mini-sized carts as toys and suggests them rather to be seen as of ritual-magical content. The Harappan model carts are thus proposed to reflect ceremonial processions similar to the *Rathas* that can be seen particularly in South India today. Besides solely weighing two opposite interpretation positions such as toys versus ritual items against each other (occasionally leading to schisms between researchers claiming either the former or the latter; Ardeleanu-Jansen, 1993: 182ff), it could tentatively appear fruitful, as well as perhaps more close at hand, to consider the divergences in light of the significance(s) discussed for the full-sized cart. As mentioned above, these have traditionally been assumed as nothing but farmers' carts, while the economic system is supposed to have depended on river- (or, in long-distance trade, on sea-) transport (Ratnagar, 2001: 56f). The use of the carts for long-distance transportations of goods overland is assumed as probably having been impossible, due to the lack of far-reaching road networks (Kenoyer, 2004: 92). As is the case for Sindh, for example, pack animals are mentioned as traditionally being preferred for such transport, despite the flat terrain. Being slow and clumsy, the cart is rather proposed for short to medium distance transport (Ratnagar, 2006: 241).

At the same time, the carts appear though to have had significant roles to play within other domains. The suggested purposes for the solid as well as the perforated cart types mentioned above may be reminded upon. Due to capacities such as these, the carts have been suggested of key importance for the construction of the massive brick walls that surrounded the settlement at Harappa, as they should have been capable of bringing the heavy building materials needed (Kenoyer, 2004: 93). The carrying of heavy loads from villages to cities, or between cities, is pointed to as the prime role for the carts (Ratnagar, 2006: 241). Indications of significance seem possible to get at by some further factors as well. Kenoyer (2004: 90) points for example to the age of the Harappan cart, the oldest mini-sized example from Harappa going back to the Ravi phase around 3500 BC, as well as to its development into different types, culminating in the marked variety of the Middle or Classical Harappan period. Other factors should tentatively include the need for skilled carpenters to construct the carts, as well as indices of the carts possibly to have been built in a way that would have enabled one to take them apart. The constitution of some of the streets of Harappan cities, appearing as a contrast to the streets of Mesopotamian cities and wide and straight enough for a cart and a pair of bullocks (Ratnagar, 2006: 241f), could perhaps also constitute a sign, as well as the advantage of the cart to cope with rather bumpy, uneven ground (Ratnagar, 2001: 56). While among others suggesting 'cultural significance' as a useful criterion when

considering the question of economic value for pre-market systems, Ratnagar (2002: 93f) puts furthermore the peculiar rarity of ships in Harappan paintings and figurines forward. Here, the abundance of figurines representing carts indeed appears a marked and interesting contrast: the purposes and meanings of these should in this connection play a key role.

Could we thus suggest at least some of the mini-sized carts to be closely connected to such essential, though perhaps all too often overlooked, activities as those maintained here, (symbolically) linked to such central issues as building and construction? This is an intriguing thought. The diverse factors proposed above would thus perhaps be more markedly mirrored in some types or subgroups of carts, whereas presumably playing a less significant role for other cart variants (depending on purpose and nature of utilization). In this connection, even more detailed surveys would appear promising undertakings. One could for example consider 'details of utilization' a bit further, such as possible ways of fastening the shaft: may this always have consisted of the use of a kind of padding, or could a construction similar to the one for 'bottle ships' perhaps have been applied, in which a little cross-bar would have been added to be bent back by the insertion, after which it would have straightened itself up and so, when pulling in the shaft, would have acted as an effective 'stopper'? If so, this would tentatively add further dimensions to differences in manufacturing and purpose. More attention could tentatively be given to the immediate finding contexts of the cart frames as well. Would it for example be possible to distinguish a certain, regular pattern between those cart frames that were found in close connection to wheels, and those who were not? It would seem equally intriguing to undertake comparisons with assemblages of cart frames from other Harappan sites, finding out if similar patterns of preservation would turn up. Would for example solid types of frames repeatedly appear as front parts? What would similarities/differences tell us as to the significance of the mini-sized cart, as well as about the nature(s) of the particular social structures that left to us these puzzling items?

Some notes on comparison

A brief comparison of the assemblage from Bagasra with the analysed cart frames belonging to the site at Harappa yields some small but intriguing features of divergence. The most obvious is naturally the fact that the majority of cart frames derived from Bagasra exhibit the solid type of frame (which, as we remember, turns up in markedly few numbers in the assemblage from Harappa). The overwhelming abundance of fragments of perforated frames at Harappa is given a quite logical explanation, since the carts

/.../ generally are of rather fragile constitutions. This is particularly the case for the cart models of the open frame that repeatedly break into five or six parts, whereas other types depending on way of construction in average appear fragmented into four or even only two parts (Kenoyer, 2004: 100, *my translation*).

Obviously, though, this explanation cannot sufficiently account for the distribution of cart frames within the assemblage from Bagasra. This in contrast shows us that the solid frames for some or the other reasons apparently seem to have been more common (more

preferred?) at this settlement. On the other hand, the lack of items within the assemblage from Bagasra of the other type of open frame that was found at Harappa (displaying an 'open frame and concave-shaped short sides'), could tentatively be taken to further confirm the assumed rareness of this variant. Accordingly, and from one point of view, the cart frames from Bagasra could indeed be suggested to follow in line with the statement by Ratnagar as to the absence within the Harappan realm of regional types of cart frames. Constituting the most recurrently appearing types, the solid and the perforated frames conform to the general, main cart frame models found at various Harappan sites. Simultaneously though, the rows of six small holes noted to cross the upper side of the solid type of frame may be put forward as a particularly intriguing feature complicating this statement. These seem to hint at a small, yet distinct difference in appearance, which thus could be suggested to distinguish this particular frame from what appears to be the 'average' frame of solid type (see Fig. 3 again). While these holes may possibly have served the purpose of holding the axle-tree (by means of strings), they imply in fact a constructional difference compared to the references given above of how the axle-tree could have been fastened. This would also imply that the cart frame was only intended for four vertical poles, one in each corner. Whether this represents a feature that is unique for these particular frames, or appears on solid models from other sites as well, this at least expresses a mutual variation existing within the main type of solid frame. Despite small and subtle, this particular detail would thus presumably represent something of essential, well worth to be kept in mind.

In this connection, one may contemplate the features of decorative patterning as well. A number of cart frames of the perforated or open type have been reported to display a red- or black painted hatching that is assumed to imitate a mat or a net that may have been used on the full-sized carts to cover the open parts of the frame (Mackay according to Kenoyer, 2004: 101). As the analysis has shown, a hatching of clearly regular squares occurs on seven of the cart frames from Bagasra (see Fig. 7 again). In light of the supposed purpose of this kind of pattern, it is interesting to note that this is not only displayed by two items of the perforated type, but by five of the solid cart frames as well. As with the feature displayed by the small holes, it would naturally be tempting to discuss whether this would indicate a particularity of the Bagasra cart frame, or if it is actually repeated among a number of items of the solid type. A further aspect to put forward constitutes the difference in colours and the range of pattern variations that are displayed by the assemblage. Again, and besides the regular feature of red-painted squares, we notice the appearance of internal variations that may both supplement this pattern as well as disrupt the uniformity of this in an intriguing way. May these perhaps tell us of diverse kinds of mats or coverings, in turn signalling differences in significance and purpose? May some even appear as more or less unique?

Besides suggesting the division of cart frames into subgroups, as well as into diverse areas of utilization, features such as these could possibly be taken to point to a diversity in degree of variation as well ('true' anomalies not to be forgotten). This would hence appear as a further contribution to the breaking up of an anonymous homogeneity that parts the assemblage into yet smaller portions.

Conclusion

The intention of this paper has not been to present any 'facts', but rather to briefly highlight what may be possible to get at by a focus on details. As we have seen, a closer look may end up in the revealing of aspects which within a broader focused study most probably would have been missed: *the appearance of regularities*, displayed in spatial distribution and in marked similarities and differences, leading to further sortings of the items into subgroups; *exceedingly small features*, represented for example by the little holes running across the upper side of the solid cart frames, or by odd aspects such as striking states of preservation; *divergences and anomalies*, found both in comparison with the cart frame fragments from Harappa, as well as when compared with more broader, general assumptions of the 'typical' Harappan toy- or model cart. Through a focus on details, an outcome can thus be called for pointing to diversity and variations of essential.

As a necessary second step, this kind of microstudy naturally requires to be compared with other, similarly small-scale focused studies if not wanting to keep one's inquiry within a very limited space. In the long-run, this would accordingly provide a way for reaching into more general, deep-going issues dealt with in archaeological research. It may be time-consuming, but, as I would like to put forward, the reward of undertaking this kind of study would probably more than compensate for this. Through the breaking up of homogenous entities, the objects of study would tentatively turn capable of pinpointing an even greater number of aspects of essential for one's inquiry. It is my hope that this has been hinted at by this study, although it naturally would have been of significant interest to deepen a bit more into the particular results of the analysis, trying to trace their implications further. What insights do they give us into the social structure once prevalent at the ancient settlement at Bagasra?

The particular details revealed by the study could in turn be suggested to become the more profound when the cart frames are primarily focused upon as that what they are; remains of miniature carts. Aspects such as regulated features would, namely, with this not only provide an external classifying of distinct models, but, more important, would above all constitute invaluable clues as to the specific social structure in which they were set to work. On the basis of this, one may *even* dare to suggest that the particular focus emphasized by this paper could serve as a way of getting more insights into the full-sized Harappan carts and the significances of these within the system of transport, etc. One may for example consider both the marked and wide-spread number of miniature carts at Harappan sites, as well as the fairly great care and carefulness that was apparently attributed to the creation of these objects (as is displayed by the fine clay and well-made constitution, as well as the meticulous measures and measure-relations noted among the cart frames from Bagasra). Logically, this intriguing simultaneity should not only provide insights into the particular meanings and purposes inscribed into the miniature carts, but should indirectly hint at something of essential concerning the full-sized carts as well. Another example could be derived from the noticeable contrast displayed above, touching the subject whether the Harappan miniature carts should be seen as uniform, or rather varied in appearance. As mentioned, the words by Ratnagar of no regional variation of the Harappan carts to be seen since no cart type has appeared in Gujarat which is not displayed at sites such as Mohenjo Daro or Harappa, could

indeed be further confirmed by the particular types found at Bagasra. As we have seen though, the cart frames from this site also reveal a range of varieties, odd details and possibly unique features that simultaneously sets them clearly apart from any 'standard model'.

Hence, by a study on details and a focus on small, intra-societal, commonly overlooked phenomena, one could tentatively get at larger, inter-societal issues such as natures of trade and communication networks, as well as be provided with new perspectives with which to approach the debated issue of uniformity versus variability within the Harappan realm.

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Footnotes

1. Along with other, selected toy identified materials belonging to the Classical Harappan settlement at Bagasra, Gujarat, these items were subjected to a detailed analysis in order to study differences and similarities of appearance, spatial distribution, etc. The analysis, on which this account is partly based, revealed interesting indices of regularities and subsequently formed the basis for a social theoretical discussion on the toy concept in relation to archaeology (Rogersdotter, 2006).
2. This naturally includes the few examples of carts made from bronze/copper as well (see e.g. Kenoyer, 2004: Figure 6.15-17). These are however not considered for this discussion.
3. The site has been in focal point for excavations conducted by the Department of Archaeology and Ancient History, Maharaja Sayajirao University of Baroda, 1996-2005.
4. The term 'Chalcolithic' is within the Harappan context applied on both Pre-Harappan and Post-Harappan sites, as well as on settlements contemporary to and in varying degrees affiliated with Classical Harappan features (P. Ajithprasad: personal communication 2004). For more on the particular, Chalcolithic traditions of Gujarat, see Sonawane and Ajithprasad, 1994.
5. For a more detailed description of the particular working process of the analysis and the way of evaluating which variables to consider, see Rogersdotter 2006.
6. The appearance of various 'subgroups', etc., could of course be understood in terms of changes through temporal succession. Among others due to the relatively short time span of the phase in question, this has however not been within the frames of this study.
7. For a discussion on the particular dichotomy of toys ritual items and its suggested roots of origin, see Rogersdotter 2006.
8. A depiction of a cart frame of perforated type though from Kalibangan that appears to have been outfitted with a modern axle-tree by a similar use of strings is provided by Sharma, 2003: Hand List VI B: 246.

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