Case #3: Anomalous Uses of Apparent Numerical Signs

Numerical signs are typically the easiest and first parts of scripts to be deciphered. This was the case with Sumerian, Linear B, and the Maya script. Much is also known about numbers in Linear A (including how fractions work), proto-Elamite, and other largely undeciphered scripts.

The case is radically different in the case of the Indus Valley. As is well-known, many anomalies exist in the different classes of vertical strokes typically assumed (based on comparisons with Middle Eastern and other early scripts) to be numerical signs. Some of these anomalies were seen by Gadd in the 1920s (Marshall 1931, Vol. I, 412 ff.) and by Ross (1938). Drawing on the large corpus of inscriptions currently available, we are in a much better position today to appreciate these anomalies. Very quickly:

1. The distribution of supposed Indus number signs is strangely uneven. The system contains a large number of apparent 2’s and 3’s, in several morphological types. After that, the numbers of signs drop fast. There are only about 1/4 as many 5’s as 4’s, and only about 1/2 as many 6’s as 5’s. 7’s are fairly common, but symbols made up of 8, 9, and 10 strokes are extremely rare. Above that, you find only 12’s and occasional 24’s. Pace Robinson (2002: 285-6), the claim that there is “considerable” evidence for a special symbol for 10 (one rare sign looks something like the Egyptian 10) is unsustainable — since that sign appears in only 6 out of 2,905 inscriptions in Mahadevan 1977, and there is no way of telling if it was intended to be a number. (See the illustration on the bottom of the chart on the next page.)

2. Certain apparent numerical signs are regularly found in conjunction only with specific non-numerical signs, and never with others — in a way that again seems peculiar for an abstract number system.

3. Frequently apparent numbers are grouped with other numbers in idiosyncratic ways — with no intervening signs separating them — or are found all by themselves on inscriptions. One interesting example is shown below:

One of many anomalies in supposed number signs is illustrated in K-59a (a modern impression of a seal). In the inscription, three signs usually assumed to stand for the numerical modifiers 5, 3, and 1 all show up in front of the ‘Bow’ sign — or, worse, after it, if we accept the old view that inscriptions were ‘read’ right to left.

There are many other anomalies of this type, but this is enough to illustrate quickly the kinds of problems that exist. A chart containing a quick overview of a few of these difficulties is shown on the next page.
### Examples of a Few Apparent Numerical Signs Using Data from Mahadevan’s Concordance

<table>
<thead>
<tr>
<th>Apparent number sign</th>
<th>Number of signs (out of 13,372)</th>
<th>Number of signs for each subtype</th>
<th>Most frequent signs found to the left of the apparent number (subscript numbers signify how many cases)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tall 3</td>
<td>314</td>
<td></td>
<td>![Images]</td>
</tr>
<tr>
<td>Short 3</td>
<td>495</td>
<td>151</td>
<td>![Images]</td>
</tr>
<tr>
<td>Two Row 3</td>
<td>30</td>
<td></td>
<td>![Images]</td>
</tr>
<tr>
<td>Tall 4</td>
<td>64</td>
<td></td>
<td>![Images]</td>
</tr>
<tr>
<td>Short 4</td>
<td>134</td>
<td>70</td>
<td>![Images]</td>
</tr>
<tr>
<td>Tall 5</td>
<td>22</td>
<td></td>
<td>![Images]</td>
</tr>
<tr>
<td>Short 5</td>
<td>66</td>
<td>38</td>
<td>![Images]</td>
</tr>
<tr>
<td>Two Row 5</td>
<td>6</td>
<td></td>
<td>![Images]</td>
</tr>
</tbody>
</table>

**Not illustrated in this chart:** apparent numerical signs supposedly standing for 6-10, 12, and 24.

One symbol supposedly standing for 10 according to Robinson 2002 (also Parpola 1994, and Fairservis before him) is shown below:

![Images]

**NB:** these signs only show up in a total of six inscriptions out of 2,905 in Mahadevan’s concordance — and in context none of these looks all that numerical.
Numbers or Numerology? (‘The Three,’ ‘The Seven,’ etc.)

The usual way anomalies like this are handled is to claim that while in some cases (e.g., in counts of sacrifices or sacrificial vessels) simple numerical modifiers are used in the inscriptions — and there is no reason to doubt this — in other cases apparent numbers were used for their rebus (sound) values, as in the simple English example “I yearn 4 you!”

How do you handle these anomalies when the evidence suggests that Indus inscriptions didn’t encode speech? A surprisingly simple answer is suggested by cross-cultural studies of ancient esoteric traditions. Many visual hints exist in Indus inscriptions (see the next page) that numbers often played purely symbolic roles. In these cases, the stroked lines did not function as numerical modifiers of other symbols (‘three fish’ or ‘seven Water Carriers,’ etc.) but as numerological symbols — as ‘The Three,’ ‘The Seven,’ ‘The Twelve,’ and so on — referring to divine, celestial, or mythological forces.

In Mesopotamia, numbers were regularly used this way to symbolize the gods. Ea, for example, was often symbolized by 40, and Enlil by 50. ‘The Seven’ in Mesopotamia — most commonly represented by seven dots (a pictorial example is shown on page 20) — could alternately stand for ‘The Seven Gods,’ or Pleiades, or ‘The Seven Sages,’ and so on.

Similar practices were common in Vedic traditions. Thus in the Rgveda we find references to the ‘Three Times Eleven’ (gods) or the ‘Seven Times Seven’ (Maruts) — and so on for many other cases. Many parallels to these practices exist in other premodern civilizations.

Hints are shown on the next page of similar tendencies in Indus inscriptions.

Quick notes on other interpretations of proposed or apparent Indus numbers

1. There are good reasons to be skeptical about the idea (Bonta 1996) that Indus fish signs were linked to a numbering or metrological system. One reason this suggestion is implausible lies in the fact that high-frequency fish signs show up in all Indus media in roughly the same percentages we would expect if they were distributed randomly. (Expected and actual frequencies can be calculated using the raw data in Table IV of Mahadevan 1977, “Distribution of Signs by Object Types.”) These media include copper plates, which were apparently used in rituals or as talismans, and on which we would not expect to find evidence of elaborate calculations. Cross-cultural studies of Middle Eastern, Aegean, Chinese, and Mesoamerican seals also put this thesis immediately into doubt (next point).

2. There are also good reasons to be skeptical about claims that crop up periodically that Indus seals were used for complex accounting purposes (supposedly à la proto-Elamite or Linear A or B tablets, etc.). One reason for rejecting this idea concerns the mass of evidence that has emerged in recent decades concerning administrative uses of seals in other civilizations (see, e.g., Palaima, ed., 1990; Perna, ed., 2002). Seals had important administrative functions throughout the ancient world, but their use in calculations was not one of them. Indeed, findings of many apparent numbers on seals (as opposed to tablets, etc.) was apparently unique in antiquity to the Indus Valley. Leaving aside simple uses in counts of sacrifices or sacrificial vessels, which appear commonly in Indus inscriptions, the simplest explanation for apparent ‘numbers’ in Indus inscriptions is that they were numerological symbols, as argued above.
A Few Hints That 'The Seven' and other Apparent Numerals Served (in Some Contexts) as Numerological Symbols

27 of 70 times that this form of ‘Seven’ appears in Mahadevan’s concordance, it does so in conjunction with the symbol in the middle (representing a hearth with a fire?). There are many interesting interpretive possibilities here that are too involved to discuss in this talk.

What are the supposed referents here of ‘The Seven’ and ‘The Three’?