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Sign and Image: Representations of Plants on the Warka Vase of Early Mesopotamia

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Sign and Image: Representations of Plants on the Warka Vase of Early Mesopotamia

Abstract
The Warka Vase is an iconic artifact of Mesopotamia. In the absence of rigorous botanical study, the plants depicted on the lowest register are usually thought to be flax and grain. This analysis of the image identified as grain argues that its botanical characteristics, iconographical context and similarity to an archaic sign found in proto-writing demonstrates that it should be identified as a date palm sapling. It confirms the identification of flax. The correct identification of the plants furthers our understanding of possible symbolic continuities spanning the centuries that saw the codification of text as a representation of natural language.

Disciplines
Ancient, Medieval, Renaissance and Baroque Art and Architecture | Archaeological Anthropology | Botany | Near and Middle Eastern Studies | Near Eastern Languages and Societies | Paleobiology

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ABSTRACT. The Warka Vase is an iconic artifact of Mesopotamia. In the absence of rigorous botanical study, the plants depicted on the lowest register are usually thought to be flax and grain. This analysis of the image identified as grain argues that its botanical characteristics, iconographical context and similarity to an archaic sign found in proto-writing demonstrates that it should be identified as a date palm sapling. It confirms the identification of flax. The correct identification of the plants furthers our understanding of possible symbolic continuities spanning the centuries that saw the codification of text as a representation of natural language.

Introduction

Uruk (Warka) is the apparent site of invention of an archaic sign system that employs pictographs, but is conventionally termed proto-cuneiform script. Excavations there also produced numerous works bearing pictorial imagery. Among the most famous and the most remarked upon is the Warka Vase, which is treated as the paradigmatic representation of the period, presenting in registered format a visual articulation of fundamental aspects of Late Uruk society (Bahrani 2002; Bernbeck and Pollock 2002; Groenewegen-Frankfort 1951; Suter 2014; Winter 2006) (fig. 1).

This paper reconsiders aspects of the imagery on the Warka Vase. The new identification of one of its plant motifs in conjunction with its companion plant, flax, offers a more nuanced view of the Vase and its meaning during Uruk times. Specifically, a plant form with a cross-hatched head in the Uruk image repertoire is an abstraction of an actual date palm offshoot. It also closely resembles a sign that carries meanings associated with date palm offshoots.1

We argue that both the cross-hatched plant and the proto-cuneiform sign are based on a “natural prototype” recognized from the “visible world” (see Knight 2013: 1 We use Assyriological typographical conventions for transliterating cuneiform and proto-cuneiform signs into our alphabet. Most cuneiform signs have a variety of both logographic or phonographic readings. For Sumerian, where the particular word or sound is obvious, we use lower case roman type. Where it is either not clear or we wish to acknowledge the presence of a sign without regard to its function, we use upper case roman type. Signs used as semantic classifiers are in superscript. For Akkadian, the same conventions apply, except phonographic readings are in lower case italics. For both languages, lemma are in italics.

Figure 1. The Warka Vase.
Clarification of this long misunderstood visual element helps illuminate the meaning of the artifact in its original setting as well as of other artifacts bearing the motif. The two plants juxtaposed with running water suggest a horticultural setting rather than a more general agricultural one as is usually assumed. This has a number of wider implications for our understanding of the Vase. As products of these two plants—dates and a linen garment—are represented in the upper register, the plant identifications knit together the composition of the vase as a whole. Moreover, the gender implications of the two plants reinforce the sexual dichotomy evident in the file of animals and the two human protagonists in the upper registers.

Background to Symbolic Representation in the Late Uruk Period

It has been long established by philologists (e.g., Damrow 2006; Englard 1998; Gelb 1952; Glassner 2003; Green and Nissen 1987; Michalowski 1990; Nissen 1986; Woods 2010) that archaic writing of the late fourth millennium BC (Late Uruk period, see Table 1) developed in a larger symbolic environment that also included pictorial imagery carried on cylinder seals, which were used to impress tablets, hollow clay balls and container sealings (Amiet 1966; Pittman 1994b; Schmandt-Besserat 2007). From the beginning, the two symbolic systems shared some forms to denote ideas or words. In texts, the “pictographic” nature of some signs is clear, but even the typologically earliest texts carry signs that have no identifiable pictorial or real-world referent. Similarly, the motifs of the earliest imagery on the cylinder seals mostly resemble prototypes in the material world, although we cannot in all cases identify the intended referent. Some are likely to be non-representational (Pittman 1994b).

While there are some pictorial forerunners for the imagery carried on the seals of the Middle and Late Uruk period found in earlier Late Chalcolithic glyptic traditions of the fifth and early fourth millennia (McMahon 2009; Pittman 2001, 2013; Reichel 2002), the explosion of visual imagery preserved in the seals and seal impressions of the Uruk period parallels the invention and rapid deployment of signs in the proto-cuneiform script. Further, this pictorial imagery is carried not only on seals, but also on more “monumental” works of art such as sculpture in the round, relief sculpture on stone stelae, vessels and mace heads. The initial strong relationship between the writing system and iconography begins to fade after the Uruk period (Cooper 2008).

The Warka Vase

Excavated at the site of Warka in early 1934 by a German team, the Warka Vase was found in the Level III (Jemdet Nasr period) of the temple precinct of Eanna along with other objects that had clearly been deposited together. The excavators called the group a Sammelfund, and considered it to be a votive offering (Heinrich 1936). The imagery is close in style and iconography to seal impressions...
and seals found at the site in both Levels IV and III, so the terminus ante quem of Uruk III is consistent with the stratified comparanda. The imagery rendered in low relief in register bands on the Vase has been discussed in terms of abundance (Winter 2006), performativity (Bahrami 2002), or as a representation of the social structure and hierarchy of Uruk society (Bernbeck and Pollock 2002; Suter 2014). These studies reveal the multivalent cultural meanings that can be extracted through close analysis of iconography, style and context.

The Vase was carved in poor quality alabaster and is almost one meter in height (96 cm). It had been repaired in antiquity, and was found together with fragments of what was certainly a second vase that carried similar or identical imagery. The three register bands each carry a distinct theme that, when combined, symbolically refer to what must have been among the most important elements of Late Uruk society. The bottom register depicts water, plants and animals. The middle register carries images of nude men carrying bowls, a spouted jar and baskets overflowing with a variety of goods. The upper register renders the most complex imagery in which a male figure (mostly missing but restored with confidence as the paramount individual) confronts a female who stands in front of symbols (gate posts) that can be associated with the later cuneiform sign for the Sumerian goddess Inana.

It has long been understood that some of the individual design elements making up the imagery on the Vase are identical to forms of signs carried on the earliest tablets. In the upper register, for example, the so-called gate post of Inana is visually identical to the proto-cuneiform sign used to denote the name of the goddess in the earliest tablets (Szarzyńska 1989). Another element that is often cited as isomorphic with a proto-cuneiform sign is the structure carried by the small figure standing on the back of the ram. This design element is formally identical to the proto-cuneiform sign for EN (Hockmann 2008).

Figure 2. a) The lowest register showing water and plants, b) outline of ‘cross-hatched’ (left) and ‘trident’ (right) plants.

The Lowest Register
A double wavy line is the lowest design element on the Vase (fig. 2a). All interpreters agree that the referent is flowing water. Indeed, this design element is isomorphic with the corresponding sign in the archaic script (Green and Nissen 1987:169, no. 1). Its location at the lowest tier emphasizes its role as a locally available, abundant and life-giving resource. Above the water, in the same register band, two types of plants alternate. Although the pairing of water and plants is represented on other sculptures of the Uruk period as well as on cylinder seals, we argue below that the association of water with the depicted plants reflects the particularly high water requirement of both of these plants. To avoid prejudgment we call them the cross-hatched plant and the trident plant (fig. 2b: left, right); the identification of neither is straightforward. While this contribution focuses on the cross-hatched plant, we consider the trident plant as well.

Most commentators on the imagery, including the authors, have assumed that the cross-hatched plant, with three broadly linear leaves ranked up the long stem, represents a ripe ear of grain, either wheat or barley. The ‘inflorescence’ (fruiting branch) of the Warka cross-hatched plant appears to have awns (bristles that emerge from ears of grain) projecting from the head, as is characteristic of cereals. This contribution rejects that association of the cross-hatched plant with a kind of cereal, because the form of the representation does not correctly capture the salient elements of the natural cereal prototype. Rather we revisit and refine an alternative interpretation of the plant first offered by Mark Brandes (1965) as belonging to an aspect of the date palm.

The second, ‘trident’ plant, has always been more difficult to parse. Van Buren (1939–41:36) and Frankfort (1996: 25) thought it was the date palm, describing the Warka Vase imagery as ears of grain alternating with date palms. Winter (2006), linking the reed bundles of the upper register to Inana, considered the trident plant in light of the later textual associations of Inana to flax and linen. She also noted morphological traits shared with the flax plant.

The Cross-hatched Plant
Scholars have assumed, but never demonstrated, that the cross-hatched plant represents grain. The first author of this contribution reconsidered this identification when perusing the Uruk archaic sign list (Green and Nis-
sen 1987). She noticed that the proto-cuneiform signs GIŠIMMAR, the forerunner of the later cuneiform sign for ‘date palm’ (Phoenix dactylifera) and GIBIL, a sign of uncertain graphic origin, closely resemble the cross-hatched plant rendered on Warka Vase (fig. 3a, b). The similarity to the GIŠIMMAR sign had already been noted by Brandes (1965) in his study of the Warka Stele. Strommenger (1967), however, dismissed Brandes’s insight in her interpretation of both the stele and the Warka Vase. Later scholars have followed Strommenger and ignored the association of the cross-hatched plant and the date palm.

Other Examples of the Date Palm Offshoot in Works of Art of the Uruk/Jemdet Nasr Period

During the Uruk/Jemdet Nasr period, the image repertory is often repeated across media. The plant image that we are identifying as a date palm offshoot can be clearly observed rendered in relief on a mace head, on which it also alternates with the trident plant (fig. 4). Additionally, it is depicted on cylinder seals where it is shown carried by either the paramount figure (fig. 5) or his acolyte (fig. 6). On the latter seal, the acolyte follows a slightly taller man who appears to be walking toward a reed bundle. The reed bundle can also be seen (in relief) as an element at the top of the seal itself. Figure 6 shows the plant with a curved stem, a depiction that more accurately represents the offshoot in nature. In other cases it is shown with a straight stem, identical to that on the Warka Vase or the mace head (Amiet 1980: image 642). In at least two instances sheep are shown eating from this plant, in each case in association with the gate post of Inana (Amiet 1980: images 637b, 642). In fact, livestock can be fed date fruits and roots (Townsend and Guest 1985: 264), date pits (Chao and Krueger 2007: 1081; Iranica 2011), and the residues of date syrup production (Iranica 2011). Reinforcing this fact, and bringing it again to the domain of early Mesopotamia, there is a line in the composition Dumuzid-Inana W (ETCSL: c.4.08.23), “May my sheep eat my plants that ignore winter and summer, my plants, my date palm saplings.”

Another context in which this plant appears is on relief carvings on vessels and on cylinder seals where it is shown rising on a curved stem behind and above the back of a domesticated bovid (fig. 7). There are two repeating stalks behind two repeating bulls. Three leaf-like appendages emerge from both stalks. The head is more linear than seen on the Vase, and cross-hatched-like patterning is incised. The parallel stems all reach the same height. The stem is curved, not straight. Similarly, a modern impression of an Uruk seal (Topçuoğlu 2010:fig. 1.2) shows two bovids(?) preceded and followed by the cross-hatched plant; another exemplar (Woods 2010:pl. 6) shows the same plant on either side of a bovid that appears to ‘grow’ out of water (two wavy lines).

We think all of these imagistic versions represent the same plant, and that plant is the date palm, or more precisely, a date palm offshoot. The bulbous base of the hand-held plant further supports this identification (fig. 6). The plants shown on Figure 7 appear to be already...
growing in the ground. If the scale of the plant shown on the cylinder seals is applicable to that of the Vase, then the plant is about as tall as a person, which accurately represents the size of an immature (i.e., not yet productive) date palm. Finally, there are clear analogies between the archaic sign and the date palm offshoot: the cross-hatched top depicts the spiral arrangement of the leaf bases at the top of the tree or offshoot, the vertical lines emanating from the bole might depict the trimmed leaves. The cross-hatched plants on the Warka Vase and the other cited imagery are very similar in appearance to the sign as well as to their prototypes in nature (see also fig. 9).

The Cross-hatched Plant and the Pictograph for Grain

In attempting to identify the cross-hatched plant, we proceed from two basic arguments: we value greater resemblance to real world antecedents; and, following the supposition that prior to the third millennium BC, script and iconography drew on common traditions of abstraction, we value resemblance to pictographs.

From these two perspectives, any grass, including wheat and barley, would be a poor fit. Grasses have thin leaves. In grasses, the leaf sheath clasps the stem, superficially suggesting the depiction on the vase. The leaf blade, however, extends at an angle from the leaf sheath (fig. 8a). Moreover, awns attached to each grain are about the same length, and so do not all end at the same height along the inflorescence (fig. 8a). Finally, the grains are arranged two-ranked up the ear, which typically is longer than it is broad.

The pictograph for grain—ŠE (fig. 8a)—is distinctly unlike the cross-hatched plant in depicting the most salient part of an ear of grain: its two-ranked form. The sign does not show leaves. Later forms of the ŠE sign use the individual ear as a collective noun, 'grain', and plant imagery on seals rarely shows individual cereal stalks. The sign derived from reed—GI (Green and Nissen 1987: 211, sign 204; fig. 8b)—should also be mentioned, because of its similarity to ŠE. For GI, the 'leaves' are 2-ranked up the stem, whose gently arced upper end evokes the inflorescence of reeds (Phragmites).

4 In later times we know of a grain goddess (Nisaba) and a beer goddess (Ninkasi), but Inana is never directly associated with grain. For a recent survey with bibliography, see Yağmur Heffron, 'Inanna/Ištar (goddess)', Ancient Mesopotamian Gods and Goddesses, Oracc and the UK Higher Education Academy, 2013 [http://oracc.museum.upenn.edu/amgg/listodeities/inanaitar/].
The Cross-hatched Plant and the Pictograph for Date Palm

The cross-hatched plant shows considerably more likeness to the GİŞIMMAR sign (fig. 3a). In later cuneiform tradition, this sign is used to write primarily the Sumerian words /qišimmar/ (or /qišimmab/) meaning “date palm” and /sag/ (with the conventional value sag₉) meaning “good.” It is reasonably certain that the sign is a schematic representation having the date palm as its natural prototype. The value sag₉ “good” is probably derived from the positive association of the date palm. The archaic texts from Uruk carry several variants of GİŞIMMAR. The main ones feature a straight stem, a cross-hatched head and ‘fronds’ that emerge vertically from the head that are ‘trimmed’ to the same height. Some variants have side-leaf vestiges and some have ‘fronds’ pendant from the ‘head’ area.

The Cross-hatched Plant, the Date Palm Sapling and the GIBIL Sign

Of all the archaic signs, however, the cross-hatched plant looks most like the GIBIL sign (3b), which displays a straight trunk, cross-hatched head, ‘fronds’ emerging vertically from the head and side-leaf offshoots. While this sign has obvious similarities to the GİŞIMMAR sign, it is not clear of what, if anything, it was originally a picture. We propose that it represents the young offshoot of a date palm.

The nature of date palm propagation makes this stage of the tree’s life-cycle a likely candidate for ideological importance, as cultivated trees are generated from offshoots rather than seeds. Date palm offshoots can grow either from the base of the plant or from high up on the stem (Chao and Krueger 2007:fig. 3) (fig. 9a, b). They form in the leaf axils (angle between the leaf and stem), and “are recognized by their curved form while seedlings have a straight form” (Zaid and de Wet 2002). For transplanting, the optimal offshoot is “at least three to five years old with a base diameter between 20 and 35 cm” (Zaid and de Wet 2002) (fig. 3b, right). Sometimes the upper leaves are tied in a bundle; for transplanting, “lower leaves must be cut off and the remaining ones tied together in order to facilitate handling” (Zaid and de Wet 2002). The remaining leaves can give the impression of a trimmed top. As the palm tree grows, the lower leaves drop off or are trimmed (fig. 9c), creating the characteristic cross-hatched appearance on the trunk. This pattern is alluded to in ancient Mesopotamian architecture as early as the Late Uruk period, in clay cone and inlaid decoration of pilasters (see Brandes 1968; van Buren 1946) and continues into the second millennium sacred architecture (e.g., at Ur and Šubat Enlil/Tell Leilan). The fronds of the date palm have more-or-less paired leaflets extending out from a central midrib, but the inflorescence has a spathe-and-spadix form—a spathe is a leaf-like structure that protects the ripening branched spadix, on which the flowers are arranged.

The philological evidence for what lies behind the GIBLE sign is ambiguous. The archaic texts from Uruk and contemporary sites are generally either records of the conveyance of goods or lists of words composed of signs produced by trainee scribes. The majority of the signs are rooted in pictorial representation of actual objects, although without the evidence of the later cuneiform corpus it would be difficult to do more than identify the more obvious allusions. We still cannot read the earliest texts in the way we can later ones, but two approaches lead us to a better understanding of them. First, the transmission of the writing system relied on the copying of lists of signs, words and phrases. These so-called lexical lists (Veldhuis 2014) were organized into broad contextual categories and were relatively standardized. Many of these lists continued to be copied for over a
We think that identifying the cross-hatched plant with the date palm sapling rather than with grain provides a more elegant interpretation. It removes the need to see a coincidence in the iconographic representation of the cross-hatched plant and the pictographic representation of the date palm sapling. The discrepancy of the GIBIL sign being derived from a date palm sapling, but not being used as the later cuneiform logogram for it, is not unique; for example, the pictograph derived from the human foot does not write the word for foot. Graphically, the main difference between the GIBIL sign and the cross-hatched plant—the latter’s luxuriant side leaves—may link the image to the sign as a “categorical salient feature” (Knight 2013: 86) that identifies the image as belonging to a particular category rather than necessarily reflecting a real botanical structure. In this case, the projections, may evoke leaves, thereby signaling that the intended referent is a plant.

**Ethnobotanical Significance of Grain and Dates**

The ethnobotanical significance of each plant also suggests that the manner of depiction of the cross-hatched plant on the Warka Vase is more appropriate for the date palm, and in particular, its sapling, than a cereal grass, even though both dates and cereals were important agricultural products. Both were grown under irrigation in lowland Iraq from as early as the Samarra period (Helbaek 1965), and archaeobotanical evidence for both thousand years. Within the entries, the forms and order of the signs evolved in keeping with contemporary usage outside of the lexical lists, but the order of the individual entries was generally preserved. Therefore, it is possible to trace the evolution of these particular signs into later periods, when other evidence permits an identification of the concepts they represent. Second, for many of the signs outside this process, we can still identify a sequence of later signs that preserves the evolutionary trajectory of the sign-form into later, better documented periods. Combining these two procedures allows us to build up an idea of what specific Uruk texts are concerned with and thus partly contextualize the meaning of signs otherwise unknown.

In later lexical lists, the GIBIL sign with a reading gibil is equated with the Akkadian word *pirhu* ‘offshoot, sprout’. More commonly, it is used to write the word *gibil* ‘to be new’. It is not, however, used to write the word for date palm sapling, which is conveyed by the sign group GJŠ.ŠA₄.TUR, probably read suhuš₄ (Heimpel 2010:103). Nor does it appear to represent ‘date palm sapling’ in the Archaic texts. There, it seems to be used as a qualifier of other nouns rather than as a substantive in its own right. (See, for example, Englund 2001:20–22 on the temporal or calendrical concept conveyed by the sign combination SU₄.GIBIL.) Moreover, in later periods, there are both graphic and philological overlaps with another sign that is unlikely to be a representation of a date palm sapling: the NE-sign (fig. 3c; for these and related sign groups, see Rubio 2012).

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Fig. 9. a) Detail of aerial offshoot growing above a leaf base. b) In Sudan, aerial offshoots are allowed to grow until they are big enough to separate easily from the main trunk. c) Palm leaves are trimmed to make it easier to climb a tree, as demonstrated to Miller in February, 2015, el-Kurru, Sudan. The cut fronds are valued as an excellent fuel.
wheat and barley (Neef 1991) and the date palm (Zohary et al. 2012: 134) appears in Mesopotamian archaeological contexts as early as the Ubaid period.

Dates were important for food, alcohol, sweetness. The trunk of the date palm was important for wood (construction, fuel), and the leaves for matting. The date palm is a cultivated tree. The plant is dioecious, which means its flowers are unisexual. For the date palm, moreover, male and female flowers grow on different individuals. In the wild or when grown by seed, approximately half the plants are male and half female (Zohary et al. 2012: 131). One male palm will provide enough pollen for fertilizing the flowers of at least 50 female palms (Nixon and Carpenter 1978: 24); only female trees produce fruit. In order to maintain varieties with desirable properties, propagation is from naturally developing offshoots, which are clones of the parent plant. Offshoots are generated by both male and female date plants as part of the growing cycle. Although fruit quality largely depends on the mother plant, there are also some named, clonally propagated male cultivars (Pintaud et al. 2013: 25). Therefore, both the male and the female offshoots of a fine date variety will be of great value. Hand-pollination of dates is likely to have been practiced from the beginning of domestication, as it is the only way to ensure that desirable traits will be manifested in the fruit. Each tree is tended individually.

Unlike date palms, stalks of grain become important in their collectivity in fields, or after threshing, when stored and used in bulk. By the fourth millennium BC, grain had been a dietary staple for thousands of years. Made into beer, wheat and barley had great social as well as nutritional value. Barley straw was fed to animals and was also used to make mats.

By the mid-third millennium, the dietary significance of these plants is clear from wheat, barley and date offerings found in the third-millennium Royal Cemetery at Ur (Ellison et al. 1978). In contrast, the iconography of the jewelry demonstrates the ancient symbolic significance only of the date palm (Miller 2000). From an agroecological perspective, both date palm and grain must be irrigated in southern Mesopotamia, but the date palm survives inundation and is commonly planted on levees near flowing water. Thus, the admittedly later symbolic importance of date in conjunction with the depiction of growing conditions close to water on the base of the Vase further favors an identification of a date palm sapling over grain.

The Trident Plant

We can now reconsider the identity of the trident plant (fig. 2b, right). In contrast to the cross-hatched plant, the trident occurs unambiguously on only two ancient objects, the Warka Vase and the Warka Mace. On both of them, the two plants have the same visual importance. They are shown at the same scale in the same number. The similarity in height suggests that the trident plant represents a sapling or small plant, not a full grown tree. With the possible exception of the shrubby tamarisk, we cannot think of a Mesopotamian tree that would have little branches or leaves growing up the stem.

The only plausible trident plant identification that has been proposed to date is flax (Crawford 1985; Winter 2006; Strommenger 1967 suggests flax or hemp). Winter’s argument depends on the reasonable assumption of cultural continuity between pre-literate and literate Mesopotamia. Her specific identification is inspired by the known later association of Inana with flax and linen garments, and there are formal similarities, too. Flax has small sessile leaves crowded up the stem (Townsend and Guest 1980: 275), and the sturdy stalks of the domesticated form (Linum usitatissimum L.) support a branching inflorescence similar to that shown on the Vase’s trident plant. The fruits are round capsules borne singly on the ends of the stems; if the trident plant is indeed flax, it is most likely represented as fruiting, not flowering. In Mesopotamia, flax is an irrigated plant (see McCorriston 1997).

GU, the archaic sign for flax, has the same general shape of an inverted triangle on a stick (Fig. 10). It is missing what might appear to be a key element: numerous small leaves, but, like the GIBIL sign, a couple of angled ticks may signal “plant” to the reader. Flax may be grown for oil or fiber, but the economic and symbolic

Figure 10. Signs and their referent. GU, flax.
importance of linen cloth in ancient Mesopotamia easily explains the visual emphasis on the fiber-bearing stem.

**Symbolic Continuities in Gendered and Political Narratives**

Art historians have noted that there is continuity in the symbolic domain from the Uruk to Jemdet Nasr and Early Dynastic I periods (Amiet 1966; Otto 2010; Pittman 1994b; Schmandt-Besserat 2007; Scott in press). This phenomenon occurs in other domains, such as architecture, administrative practices and agriculture. Imagery on the Warka Vase is largely iconographic, consisting of individual elements that represent discrete ideas in a conventional way. Once the writing system becomes clearly able to express something close to spoken language during the ED III period, images are gradually freed from the constraints of representing narrative ideas directly, and new compositional and iconographic strategies emerge (Cooper 2008). Although some associations remain stable throughout the early Early Dynastic period, such as the signs AN 'sky god/heavens' and A 'water', some images are lost and new ones develop.

**Barley and Flax vs. Date Palm and Flax**

In the texts of the second millennium flax is more commonly paired with barley than with date palm, but there is no reason a priori to assume that association goes back to the Late Uruk period. A few texts suggest the possibility of an earlier association of flax and date palm that is consistent with the agroecology of the plants. Like barley, flax is mentioned with fields, but unlike barley, it is also mentioned in the context of gardens/orchards (e.g., ETCSL c.4.08.01, c.4.08.16). Syrup (of the date) is also mentioned as a garden/orchard product (e.g., ETCSL c.2.2.2, c.2.5.4.02, c.2.6.9.5 et al.). Irrigated date palms survive the seasonal inundation of the Euphrates, and flax has a higher water requirement than grain (Anderson and Read 1966).

The Warka Vase testifies to an alternative tradition in which fertility of plants, animals, or people was conveyed by the combination of dates and flax rather than barley and flax (cf. Miller 1999, 2000, 2013). Whether these different traditions can be considered chronologically distinct or indeed divided in any other fashion is moot.

5 See Winter (2006: 206 n.11) for barley and flax; ETCSL c.1.5.1, Nanna-Suen's journey to Nibiru: "Before Dilmun existed, palm trees grew in Nibiru and the great mother Ninlil was clothed in fine linen."

6 Two possible reasons for the symbolic replacement of barley for flax are that the recession of the Persian Gulf led to the replacement of palm groves by grain fields (see Pournelle 2003) or that the date palm did not hold the same iconographic sign.

Taken together, the design elements water, date and flax create a coherent visual theme. Each one occurs in other compositions, but when all three are present, the meaning of the co-occurrence of the elements surely denotes the concept of the well-watered garden or orchard. Interpretation of the lowest register as a garden location allows us to consider long-lasting Mesopotamian tropes of gender.

**The Date Palm and the Flax Plant**

If the proposed identifications of the cross-hatched and trident plants are correct, then the Vase appears to show flax interplanted with date palms. This alternation is easily explained on symbolic grounds. In particular, the lower register shows gendered binary oppositions. Most obvious is the file of alternating rams and ewes. These sheep do not depict a normal herd, which, for management purposes, would be primarily female or, for wool herds, female and castrate. Whether the alternating plants at the bottom of the Vase are meant to represent male and female in some way or merely sensitize the viewer to the possibility of duality is less clear, but gender is hinted at in the choice of plants. The very heavy work of planting, pollinating and harvesting dates is men's work. Although other agricultural labor was also mostly men's work, weaving was women's work in Sumer, and flax products such as bridal sheets are a literary topos connected to femininity (cf. McCorriston 1997).

The ordering of the registers, with animals facing right, bears facing left, and apparent presentation of gifts from a right-facing man to a left-facing woman provides directionality to the composition, so the visual elements are more than just a simple illustration of presumably related items. Regardless of the specific ritual depicted on the Vase, the two items offered by the paramount to the goddess or her representative are the products of the plants shown on the lower register: a clothed servant presents cloth (presumably linen) and a naked one presents significance for elites who gradually infiltrated lower Mesopotamia from beyond the alluvium (Cohen 2005: 32).

Visual themes are "classes of images within a broader corpus for which it is reasonable to infer a common subject matter" (Knight 2013: 93). The composition illustrating a visual theme "generally has as its referent one dominant idea, and such ideas are commonly expressed visually by conventional forms" (ibid., p. 94).

7 By the second millennium BC, there is a particular association between dates and linen from Dilmun (see Marchesi 2011: 194; cf. also ETCSL t4.22.1, line 95, which describes the dates of Isin as being "like a great linen garment that hangs on a tree, heaped up into piles." This shows that the symbols may be based in the reality of the natural world as well as ancient economic and social relationships.
a basket topped by a cluster of dates still on the stem. At
the level of artistic composition, therefore, the date-palm
saplings and flax of the lower register are transmuted into
the products of these two plants that are proffered to the
goddess or her representative in the top register. The com-
bination of date palm and flax strengthens the duality
already apparent in the 50/50 sex ratio of the caprids.

Speculations: Maximal Parameters

Given the gendered imagery of the animals and the
proposed gendered associations of the plants, we agree
with Winter that the flax plant image is associated with
the female personage of Inana. By symmetry, the sapling
would therefore be associated with a male personage. Al-
though later Mesopotamian narrative offers a diversity of
partners for Inana, in OB literary texts the Inana cycle of
stories revolves around the relationship between the dei-
ties Inana and Dumuzi. These traditions find some echo
in the lower and upper registers of the Vase. Whether the
characters of shepherd and gardener implicit in the lower
register of plants and animals refer to divine or human
figures, early Sumerian kings are sometimes personified as
metaphorical gardeners and shepherds (Novák 2002); in
OB texts, Dumuzi is frequently referred to as a shepherd.
In the storehouse section of the Vase’s upper register we
see two animals associated in later tradition with Inana
and Dumuzi: the lioness and gazelle respectively.

Following Steinkeller’s conceptualization of a league
of southern Mesopotamian cities in the late fourth mil-
Dumuzi, Šukaletuda, Enmerker and others. And there
alumium BC or even earlier. Moreover, OB texts feature a
narrative tradition that originated in the fourth millen-
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Speculations: Minimal Parameters

It will never be easy to precisely follow the cultural
continuities and changes between the Uruk III and OB
periods, given the diachronic chasm between them. To
the extent that the ideology was sensitive to changes in
the surrounding political structures, it will, by necessity,
have to have evolved between the Uruk and OB periods.
The OB period was separated from the archaic Uruk
period by profound changes both in terms of general
political organization and the relationship between the
goddess Inana and the king. The Uruk polity seems to
have a single focus of political and economic power in
its temples. During the third millennium, however, this
original nucleus became separated into two: the temples
continued to control great economic resources but they
became politically subservient to a ruler-figure who now
lived in his own building—the palace—and controlled
large economic resources of his own (Sallabarger 2010).
More specifically, while Early Dynastic kings had a signifi-
cant relationship with Inana (Steinkeller 1999), they were
themselves treated as human figures. In contrast, OB
mythological texts reflect a later period in which kings
were explicitly divinized. At some level therefore, they are
likely to reflect an ideological break within an ongoing
narrative tradition that originated in the fourth mille-
nium BC or even earlier. Moreover, OB texts feature a
number of male figures intimate with Inana, including
Dumuzi, Šukaletuda, Enmerker and others. And there
is no reason to assume that these tales could not also be
connected with the ideology of Uruk.

Conclusion

The Warka Vase exemplifies narrative representation
across the “word-image divide” (Martin 2006). Late Uruk
visual representation, whether in text or imagery, was part
of a larger system of meaning that was understood and
shared among the elites and scribes of Uruk (see also Pitt-
man 1994a, 1994b; Michalowski 1990; Schmandt-Besserat

Miller, Jones and Pittman, Sign & Image
2007). The imagery carved on seals and other media is usually based on resemblances to things in the real world. Proto-cuneiform signs, too, were part of the “visible world” of the ancient scribes and artists. Because the first signs written on clay tablets came later, it is reasonably assumed that scribes drew on pre-existing visual conventions when devising signs.

As noted by others (Bahrani 2002; Bernbeck and Pollock 2002; Suter 2014; Winter 2006), from bottom to top, the symbols on the Warka Vase integrate many visual elements into a single, complex composition. Our new interpretation allows us to reassess the environment of symbolic cognition in which the earliest semiotic systems developed. First, contextualization permits us to see the basal tier as a garden rather than a field or just a collection of isolated plants. Second, the use of duality as an indicator of abundance is present in the Warka Vase imagery, but in some specifics differs from that of later literary texts: some time between the third millennium and 1800 BC there was a symbolic shift in tropes of abundance from the visual date and flax to the literary barley and flax. Third, our analysis strengthens gender-related interpretations. Fourth, a specifically political interpretation of the lowest register as a reference to the metaphorical role of the ruler as gardener and shepherd supports an interpretation that a ritual of alliance with political implications is depicted.

This is not the place to explicate the Warka vase in detail, and the correct identification of the plants does not directly address the complex Inana narratives. It does, however, provide a satisfying complement to interpretations based on enduring Mesopotamian tropes of fertility and abundance. Moreover, combining ideas of gender and politics, we argue that Warka vase represents some ritual of (political) alliance, either mythical or real.

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Work on this paper began by 2012. It was submitted to Iraq in August, 2013, reviewed, revised, resubmitted and finally rejected in June, 2015. We then submitted it to the Journal of Ethnobiology (with a much faster turn-around by all parties), where it was also rejected. The review process helped us substantially improve the manuscript, but in the end, the various reviewers had two basic reservations / complaints. First, they could not see, let alone accept, our most basic contribution: one of the plants on the Warka Vase is date palm, not grain. In this, we have not modified our position one bit. Second, we did not clearly express our ideas about the Sacred Marriage. In particular, aspects of the imagery suggest a direct lineal relationship with Old Babylonian metaphors a millennium later. We believe, therefore, that it is legitimate to speculate on the long-term duration of that imagery, while at the same time emphasizing the long-term variety of ideological and mythological contexts within which that imagery could be embedded. Third, the evidence for the proto-cuneiform GIBIL sign being a pictograph of a date palm sapling is somewhat circumstantial. We trust that this revision will be of interest, even to those who disagree with its conclusions.

Figure sources:

Figure 1. Warka vase. https://i0.wp.com/www.museumsyndicate.com/images/4/36478.jpg
Figure 2. Lowest register. Strommenger 1964
Figure 4. Warka mace. Margueron 1965:Pl. 81
Figure 5. Cross-hatched plant carried by paramount. Amiet 1980: no. 637-B
Figure 6. Cross-hatched plant carried by acolyte. Amiet 1980: no. 639
Figure 7. Cross-hatched plant behind bull. Amiet 1980: no. 397
Figure 9. N.F. Miller

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Summary of Main Points

Ethnobiological insight combined with iconographic analysis is a powerful tool for analyzing the Warka Vase imagery.

- At the most botanically literal, we see date palms and flax plants on the vase.
- Ecologically, we see two plants that must be irrigated growing in association with flowing water, which in turn suggests a garden habitat. The later cuneiform texts are consistent with that idea.
- Ethnobiologically, the alternating rams and ewes above the row of plants do not represent an actual domestic flock, which would have many more females than males. This understanding opens the door to gendered interpretations of the iconography.
- Along the same lines, an economic interpretation will note that the heavy labor involved in date palm cultivation is most likely to be men’s work, and the later cuneiform texts confirm that agriculture was men’s work and textile production was women’s work.
- On somewhat shakier symbolic grounds, we argue that even if the date offshoot motif does not specifically reference a virile young male plant, the alternation of palm and flax may well symbolize the same complementarity of male and female as is shown in the animal tier.
- Finally, we can bring in the Sumerian texts that are later, but direct cultural descendents of the Warka vase, to support a political meaning for the lowest register.