

Text and Textile in Exodus: Toward a Clearer Understanding of מעשה חשב¹

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Modern biblical scholars have generally been hesitant to interpret מעשה חשב,² the method used to depict the cherubim of the tabernacle's hangings (יריעת; Exod. 26:1) and curtain (פרכת; Exod. 26:31) as a specific technique. The same term was also indicated for the weaving of certain priestly garments: the ephod (Exod. 28:4), its belt (חשב; Exod. 28:8) and the breastplate (חשן; Exod. 28:4). Translators tend to understand the sense as "the work of a designer" or "craftsmanship." Nearly all take it to refer to some form of weaving.

I would suggest that the conventional translation is problematic. The issue is specificity. The Bible exhibits a distinct preference for exactness. In all of the Hebrew Bible's references to woven items, מעשה חשב is used only eight times, and *only* in reference to these three priestly garments and the cherubim on the two hangings mentioned above. Elsewhere, more general terms such as מעשה ארג or simply ויעשו are used to describe weaving. The clear implication is that מעשה חשב means more than the literal "work of a thinker/designer, . . . a creative and imaginative artist. This phrase apparently refers to some highly specialized technique of weaving, different from that mentioned in verses 36 and 28:32."³ This artisan may have been Hertz's "pattern-weaver,"⁴ or, as we shall see, may have been a tapestry-weaver or a belt-weaver.⁵

Specificity is typical of ancient Near Eastern languages when referring to types of work. Barrelet writes, "En sumérien et en akkadien . . . on connaît, concernant des gens travaillant dans un même corps de métier, des nomenclatures si soigneusement diversifiées qu'elles trahissent une division du travail obéissant à une spécialisation très fine."⁶ Note the fineness of meaning in such terms as *išpar birmi* (weaver of

1. Scholars have been exceptionally generous with ideas and guidance. Sincere thanks to Elizabeth Barber, Carol Bier, William Hallo, Madelyn van der Hoogt, Max Knoecklein, Jean-Paul Leclercq, Chantal Rouquet, Marcia Schoppik, Peri Sinclair, and Gisela Soldovieri. Please note the use of the following abbreviations: *CIS* = *Corpus Inscriptionum Semiticarum*; *JEA* = *The Journal of Egyptian Archaeology*; *JPS* = *Jewish Publication Society*; *NJPS* = *Tanakh: The Holy Scriptures: The New JPS Translation according to the Traditional Hebrew Text*; *NRSV* = *New Revised Standard Version*.

2. See Appendix 1 for various interpretations of this phrase.

3. Nahum M. Sarna, *The JPS Torah Commentary: Exodus* (Philadelphia, 1991), 167.

4. J. H. Hertz, *The Pentateuch and Haftorahs* (London, 1962), 330n.

5. Tapestry is a weft-faced weaving technique in which wefts are discontinuous. For further clarification of technical weaving terms, please see the next section.

6. Marie-Thérèse Barrelet, "Un Inventaire de Kar-Tukulti-Ninurta: Textiles Décorés Assyriens et Autres," *RA* 1 (1977), 59.

multicolored fabrics), *išpar kitê* (linen weaver), and *išpar šiprāti* (weaver of *šiprātu*-garments).⁷ Similar precision is shown in the names for other types of work mentioned in Exodus (Appendix 2).

Consider also Exod. 35:35: “(Bezalel and Oholiab) have been endowed with the skill to do any work—of the carver, *the designer*, the embroiderer in blue, purple crimson yarns, and in fine linen, and of the weaver—as workers in all crafts and as *makers of designs*.”⁸ This translation results in a problematic redundancy—“designer . . . makers of designs.” Certainly, *חשבי מחשבת* are “makers of designs.” But if we understand the first mention of *חשב* as referring to a specific artisan (the sash-weaver, perhaps), the redundancy is eliminated and the sentence structure is cleaner.

Weavers know that there are a limited number of techniques that can create woven designs, with tapestry being one of the only weaving techniques that can depict a detailed representation.⁹ And archeologists have long mused about the possibility that Syria or Israel may have been the site of tapestry’s origin!¹⁰

We should note here that any student of textiles would strenuously object to the use of the term “embroidery” to mean weaving. Embroidery is a needle technique used to decorate cloth. Weaving is a process used to create cloth. The term *מעשה רקם*, once translated “the work of the weaver in colours”¹¹ is now generally understood to mean embroidery.¹²

This paper will study *מעשה חשב* in the context of the other languages of the ancient Near East in search of a link that clarifies its meaning—under the assumption that that meaning is technical. Nearly all scholars date the priestly material in Exodus to the middle of the first millennium B.C.E. Did any nearby culture of the time use a word or phrase meaning “craftsmanship” to refer to decorated textiles, particularly tapestry? Is there a loan word, a cognate or a calque that would indicate a link between the biblical phrase and the languages of the surrounding area?

The analysis will suggest that *מעשה חשב* is indeed linguistically related to other textile terms in the ancient Near East—but not to the technique of tapestry! Rather, it will hold that the term is rooted in words meaning “sash” or “belt.” We will examine the extraordinary level of sash weaving as early as the middle of the 2nd millennium, and discuss the technical issues involved in weaving detailed representations. A discussion of possible linguistic links will then be presented, followed by the conclusions.

7. CAD I/J, 253–54.

8. Sarna, *The JPS Torah Commentary: Exodus*, 224–25.

9. Dr. Elizabeth Barber points out (pers. comm., July 27, 2002) that “weft-faced ‘overshot’, also brocade—with continuous or discontinuous weft over a ground-weave” was used as a technique for creating figures. Exploring any linkage between this technique and our subject phrase would require separate study. Regrettably, we will not be able to investigate that here.

10. R. J. Forbes, *Studies in Ancient Technology: Volume IV* (Leiden, 1956), 198; cf. E. J. W. Barber, *Pre-historic Textiles: The Development of Cloth in the Neolithic and Bronze Ages with Special Reference to the Aegean* (Princeton, 1991), 49n.; Barrelet, “Un Inventaire,” 51–92, citing Durand, Riefstahl, Ellis, and Daressy. See also Walter Mayer, “MARDATU ‘Teppich,’” *UF* 9 (1977), 189.

11. JPS.

12. NJPS, NRSV, Revised English Bible, New Jerusalem Bible.

Technical Issues Involved in Weaving Detailed Representations

In E. J. W. Barber's thorough study, *Prehistoric Textiles*, she explores the patterning techniques that were available to weavers in the Near East in the middle of the 2nd millennium.¹³ For this discussion, the most pertinent are the warp- or weft-faced weaves (see diagrams 1–2), since the more either the warp or weft is allowed to predominate, the greater the level of detail the artisan can achieve. (Unfortunately, as Barber comments, the archaeologist “seldom can tell warp from weft because the scraps are so small. Hence we need a generic term *faced* for ‘warp-faced’ or ‘weft-faced’.”¹⁴) It seems a fair assumption that the depiction of cherubim would have required some kind of “faced” weave.

In rep weave¹⁵ (fig. 1) and tablet-weaving¹⁶ (fig. 2), the weaver can create stripes and simple graphic elements in an all-over design. Both are warp-faced weaves, and tablet-weaving is double-faced¹⁷ as well. In simple weft-faced weaving¹⁸ (figs. 3, 4¹⁹), wefts are continuous and create designs similar to those in rep and tablet-weaving. In tapestry, a weft-faced technique in which wefts are discontinuous, designs can be highly detailed, non-repetitive, and placed anywhere on the cloth (fig. 5).

Except in the case of tapestry, our examples are all bands of fabric. Wider widths are possible with some of these techniques, but it is true that the weaving of bands was a very important form of the weaver's craft. As early as the beginning of the 6th millennium, the people of Çatal Hüyük were using “carefully woven narrow tapes.”²⁰ These bands had become highly developed by the middle of the 2nd millennium. The fact that the bands in figures 1–4 were preserved in the tombs of Senmut, chief steward of Hatshepsut, and Pharaohs Thutmose IV, Tutankhamun, and Ramses III is proof of their extraordinary value.

Tapestry probably developed more recently. The earliest find is our example (fig. 5). It must also have been considered extremely valuable to have been included in the tomb of Tutankhamun. In fact, Daressy describes other fabric finds whose

13. Barber, *Prehistoric Textiles*, 152–62. For an excellent explanation of woven textile decoration, see Carol Bier, “Textile Arts in Ancient Western Asia,” in Jack M. Sasson et al., eds., *Civilizations of the Ancient Near East* (Peabody, 1995), 1567–88, esp. 1571–74.

14. Barber, *Prehistoric Textiles*, 127.

15. “A type of cloth weave in which there are more warps than wefts to the centimeter and in which the warp bends more than the weft”; Forbes, *Studies in Ancient Technology*, 188.

16. Rather than describe this rather complicated technique here, please see Barber, *Prehistoric Textiles*, 118.

17. The warp is “handled in such a way as to form two separate faces to the cloth at once, some of the warp being hidden inside when not wanted for the patterns visible on either face”; Barber, *Prehistoric Textiles*, 156–57.

18. “A weave in which the weft covers the warp. The warp, hidden within the structure, acts as a scaffold for the interlacement while the weft yarns create the composition”; Nancy Arthur Hoskins, *Weft-Faced Pattern Weaves: Tabby to Taqueté* (Seattle, 1992), 10.

19. Hoskins, *Weft-Faced Pattern Weaves*, 311–22, makes a convincing argument that these bands on the tunic of Tutankhamun, and Textile 1045 (also from the tomb) are weft-faced rather than warp-faced as argued by Crowfoot in G. M. Crowfoot and N. de G. Davies, “The Tunic of Tutankhamun,” *JEA* 27 (1941), 123–24.

20. Barber, *Prehistoric Textiles*, 81.

designers used painting or printing, which may have indicated an attempt to recreate these luxury fabrics at a lower cost.²¹

*Linguistic Links*²²

Weaving terms were profuse in the ancient Near East, doubtless due to the high level to which the craft had been developed (as seen in figs. 1–5) and the importance of the textile industry.²³ Weavers are referred to as: *ušbar* (Sumerian²⁴), *išparu* (Akkadian²⁵); *lú-^{giš}bala*,²⁶ *lú-túg-tag-ga*,²⁷ *lú-túg-du₈* (Sumerian); *mḥš* (Ugaritic²⁹), *māḥiṣu* (Akkadian³⁰); ארג (Hebrew³¹). As noted earlier, weavers could be classified according to their specialties. Barrelet, citing Köcher's texts from the palace of Tukulti-Ninurta, showed that the word *mardatu* referred specifically to tapestry.³² The term was widely attested at Mari,³³ and appears in other forms as *mardatuḥlu* (Akkadian³⁴), *mrđt* (Ugaritic³⁵), and possibly מרדד.³⁶ But none of these terms seems to shed much light on מעשה חשב.

Following the trail of חשב in its sense of “to think, to reckon” is more intriguing. Another form is the Phoenician *H-Ṣ-B*.³⁷ According to Krahmalkov, *H-Ṣ-B* had

21. Daressy cited in Barber, *Prehistoric Textiles*, 159.

22. For the novice in the field of Assyriology, the research is complicated by several factors. While loan words and cognates are relatively simple to research (most dictionaries being organized in the “foreign” language), calques are harder to pursue. Another obstacle is that the CAD T Volume is not yet available (http://www-oi.uchicago.edu/OI/AR/00-01/00-01_CAD.html), and a clearer understanding of the Akkadian *taḥapšū* is essential for advancing our understanding.

23. “Textile manufacture and metallurgy were the twin pillars of Mesopotamian industry”; William W. Hallo, “Obiter Dicta Ad SET,” *AOAT* 203 (1979), 8.

24. Lucien-Jean Bord, *Petit Lexique du Sumérien à l'Usage des Débutants* (Paris, 2001), 153.

25. *CAD* I/J, 255.

26. Bord, *Petit Lexique*, 93.

27. Hartmut Waetzoldt, *Untersuchungen zur Neusumerischen Textilindustrie* (Rome, 1972), 138, n. 505.

28. “Fuller” (Bord, *Petit Lexique*, 142; and Steinkeller, as cited in Barber, *Prehistoric Textiles*, 220); but “braider/cordmaker,” which may not have meant weaver, but could have referred to tablet-weaver (Waetzoldt, *Untersuchungen*, 271); “cordier-corroyeur (?)” Olivier Rouault, *ARM XVIII: MUKANNIŠUM: L'Administration et l'Économie Palatiales à Mari* (Paris, 1977), 281; and “tapissiers (?)” Maurice Birot, *ARM IX: Textes Administratifs de la Salle 5 du Palais* (Paris, 1960), 305.

29. Sergio Ribichini and Paolo Xella, *La Terminologia dei Tessili nei Testi di Ugarit* (Rome, 1985), 20. They differ with Heltzer, who considers this word to have a military connotation, because of its root in the word meaning “to beat.” Ribichini and Xella find its sense of “beater” to be a synonym for “weaver.”

30. Jeremy Black, Andrew George, and Nicholas Postgate, eds., *A Concise Dictionary of Akkadian, 2nd (Corrected) Printing* (Wiesbaden, 2000), 191. Cf. Jean Bottéro, *ARM VII: Textes Économiques et Administratifs* (Paris, 1957), 274.

31. R. Alcalay, *The Complete Hebrew-English Dictionary* (Israel, 1990), 153.

32. Barrelet, “Un Inventaire,” 57–70.

33. *ARM* VII, 90, 238, 251, 292. Cf. *ARM* XVIII, 12, 25, 63.

34. *CAD* M/1, 277–78; cf. Mayer, “MARDATU ‘Teppich,’” 178–89.

35. Ribichini and Xella, *La Terminologia*, 50–51. Cf. “The King to the Queen-Mother in the Matter of the Amurrite Princess,” trans. Dennis Pardee in W. W. Hallo & K. Lawson Younger, eds., *The Context of Scripture, Vol. 3: Archival Documents from the Biblical World* (Leiden, 2002), 90–91.

36. Virolleaud, as cited in Barrelet, “Un Inventaire,” 58.

37. Ludwig Koehler and Walter Baumgartner, *A Bilingual Dictionary of the Hebrew and Aramaic Old Testament: English and German Supplement* (Leiden, 1998), 339; cf. *BDB*, s.v.

two homonyms: *H-Š-B* I, to impute or to count; and *H-Š-B* II, weaver!³⁸ However, neither Tomback³⁹ nor Hoftijzer and Jongeling⁴⁰ cites *CIS* i 74.1, the inscription used by Krahmalkov, and neither finds a sense of weaving in *H-Š-B*.

Even more interesting is the Egyptian *hbs*, which translators see related to חבש (to tie or bind). This term had many meanings, among them “to reckon or to count.”⁴¹ But it also had a raft of meanings dealing with clothing, including “to clothe, clothes, cloth,”⁴² “to cover over, clothed in the very best clothes, raiment, horse-cloth, chariot-cloth or cover, festival apparel, and Tuat IX, god of raiment and funerary swathings.”⁴³

Several authorities hypothesize that חשב (which in the Hebrew Bible refers *only* to the belt of the ephod) is also rooted in חבש. Even-Shoshan writes, “Possibly from חשב; another opinion: a metathesis of the letters of חבש, from חבש.”⁴⁴ Klein⁴⁵ agrees with Even-Shoshan. Koehler and Baumgartner state that חשב develops from חבש, a hypothetical form of חבש.⁴⁶ Ben Yehuda does not go so far as to connect חשב to חבש. He considers its source unknown, and prefers to connect it to the Arabic نساء. However, an understanding of the term as “artwork” troubles him, since all of the items created for the tabernacle could be so characterized.⁴⁷

So the critical question is: could מעשה חשב be rooted in חשב? With the clue that חשב may be rooted in חבש, we are led to pursue חבש in search of a clearer understanding of מעשה חשב, and that is a fruitful search indeed.

Terms related to חבש are abundant in the ancient Near East—and the associations with weaving are striking. In addition to the Egyptian *hbs*, we have in Hurrian, *taḥapše*, meaning clothing;⁴⁸ in Akkadian, *taḥapšu*, a horse blanket;⁴⁹ and felt, (felt-) rug for horses, furniture;⁵⁰ in Hittite, *taḥapši*, which means “belt” when used “as part

38. Charles G. Krahmalkov, *Phoenician-Punic Dictionary* (Leuven, 2000), 199.

39. Richard S. Tomback, *A Comparative Semitic Lexicon of the Phoenician and Punic Languages* (New York, 1974), 154.

40. J. Hoftijzer and K. Jongeling, *Dictionary of the North-West Semitic Inscriptions* (Leiden, 1995), 409–11.

41. E. A. Wallis Budge, *An Egyptian Hieroglyphic Dictionary* (New York, 1978), 477.

42. Raymond O. Faulkner, *A Concise Dictionary of Middle Egyptian* (Oxford, 1996), 167.

43. Budge, *An Egyptian Hieroglyphic Dictionary*, 476.

44. המלון החדש; ארלי מן חשב; לדעה אחרת: הפוך אותיות במקום חבש. מן חבש (Jerusalem, 1969), 849. I am especially grateful to Peri Sinclair for her assistance in translating this passage. Any errors in the translation are, of course, my own.

45. Ernest Klein, *A Comprehensive Etymological Dictionary of the Hebrew Language for Readers of English* (Jerusalem, 1987), 235.

46. Ludwig Koehler and Walter Baumgartner, *The Hebrew & Aramaic Lexicon of the Old Testament*, rev. by W. Baumgartner and Johann Jakob Stamm (Leiden, 1994), 360; cf. Koehler and Baumgartner, *Bilingual Dictionary*, 274–75, 340.

47. “לא נתברר מקורו . . . הלא גם כל שאר הכלים שנוכרו בענין היו כלים מלאכת חשב.” Eliezer Ben Yehuda, *מלון הלשון העברית* (New York, 1960), 1794.

48. “Emprunt à l’akk. *taḥapšu*, sorte de vêtement; cf. Goetze, *Cor. Ling.* 58 sq.—Mais *taḥapši*, par sa forme, pourrait être bien un mot hourrite en -(a)pši, emprunté par les Semites de Syrie, et passé de là chez les Hittites (Bog. *taḥapši*, akkadogramme),” Emmanuel Laroche, *Glossaire de la langue hourrite* (Paris, 1980), 250–51.

49. Von Soden, *AHw.*, 1301.

50. Black, George, and Postgate, *A Concise Dictionary of Akkadian*, 393.

of a dress,”⁵¹ and “a kind of girdle.”⁵² In Ugaritic, *ḥbš* means “a belt, a band,”⁵³ “from a root meaning to bind”⁵⁴ and *tḡpt* is “the equivalent of the Hurrian *lú-taḥapšu-ḥuli*, a maker of *taḥapše*”⁵⁵ (translations mine). Similarly, in his discussion of the Proto-Semitic *taḥbašata*, Hoch remarks, “possibly derived from the root *ḥbš* ‘to bind’”. Cf. Biblical Hebrew חֶבֶשׂ . . . perhaps in Hurrian as *taḥapsi* . . . The Akk. word *taḥapšu* ‘fabric, horse blanket’ is possibly related.”⁵⁶ The sense of this word, time and again, is that of “belt.” Unfortunately, there are numerous sites for which there is no attestation for *ḥbš*, *ḥšb*, *ḥbš*, *ḥšb*, or any form of *taḥapšu*. In particular, no connections to the language of Ebla were found.⁵⁷ Given the aforementioned “Syrian connection,” this is disappointing.

Now we come to a puzzle: if the word for tapestry, *mardatu*, was widely known, why would the Bible choose a word related to *taḥapšu*, a belt or sash, in describing the depiction of the cherubim, as well as the weaving of the breastplate, the ephod, and its belt? Perhaps we must question our assumptions about the detailed nature of the woven cherubim.

The technique of מַעֲשֵׂה חֶשֶׁב was used to create some fabrics (the hangings and curtain) which depicted figures (cherubim), as well as other fabrics (the ephod, its belt, and the breastplate) which apparently did not. As noted earlier, *tapestry allows the most detailed depictions*. But perhaps מַעֲשֵׂה חֶשֶׁב was a technique like one of those used in figures 1–4 (i.e., belts, bands, sashes, etc.) rather than that of figure 5 (tapestry). Recall that these were warp- and weft- faced weaves, with small geometric figures in an all-over pattern. This would not necessarily imply that the finished products of the tabernacle were entirely done in this technique. We have seen (figs. 1 and 3) fine examples of strips of patterned fabric sewn to larger pieces of cloth.

Certainly the ephod, its belt, and the breastplate can be visualized in rep, tablet-weaving, or weft-faced weaving. But how could cherubim, with all their animal-like features, have been portrayed in small, geometric design elements? We know that the golden figures atop the ark had faces and wings spread upward (Exod. 25:20). This detailed understanding of their form would argue for a very detailed representation, only possible with tapestry (as in fig. 5).

In an analogous situation, Barrelet makes an interesting argument about the representation of cities in Near Eastern iconography. She hypothesizes that designs of innumerable squares had come to represent innumerable towers and could thus be used to symbolize them (fig. 6).⁵⁸ Today, graphics abound which convey very complex concepts using very simple symbols: (examples: ✱ ➔ ☒ Ⓢ ⊗).

51. Albrecht Goetze, “Hittite Dress,” in *Corolla Linguistica: Festschrift Ferdinand Sommer* (Wiesbaden, 1955), 59.

52. Edgar H. Sturtevant, *A Hittite Glossary* (Philadelphia, 1936), 146.

53. “una cintura, una fascia”; Ribichini and Xella, *La Terminologia*, 36.

54. “Da una radice che ha il senso di ‘legare’, ‘attaccare’ o ‘cingere’”; *ibid.*, 36n.

55. “Il termine ugaritico è l’esatto equivalente del hurrita *lú-taḥapšu-ḥuli*”; *ibid.*, 68.

56. James E. Hoch, *Semitic Words in Egyptian Texts of the New Kingdom and Third Intermediate Period* (Princeton, 1994), 362.

57. Edmond Sollberger, *Administrative Texts Chiefly Concerning Textiles* (L. 2752) (Rome, 1986). Cf. Pelio Fronzaroli, “Studies on the Language of Ebla,” *Quaderni di Semitistica* 13 (1984), 155.

58. “A partir de l’Obélisque blanc les monuments néo-assyriens montrent, c’est exact, des remparts (murs et tours crénelés) en nombre si grand qu’on ne saurait les compter; puis un motif réduit qui dérive

If the cherubim (“sphinxes” as rendered by Fox⁵⁹) were a well-defined symbol, they could have been represented in a simplified, stylized way and possibly manifested in weaving as a small geometric design element. In fact, Plaut comments that their scant description “suggests that cherubim were well fixed in the reader’s imagination.”⁶⁰ We have a magnificent example of this sort of stylized representation in the ankh on the sash of Ramses III (fig. 2). Thus, all the fabrics in question could have been woven in rep, tablet-weaving, or simple weft-faced weaving, the techniques used to create the sashes and bands in the Egyptian examples.

The highly developed art of sash weaving leads to an intriguing hypothesis: חשב might be related to חבש, *hbš*, *taḥapšu*, and *ḥbs* not merely as a metathesis of these words. Perhaps there is an etymological relationship reflecting the fact that belts and sashes were an important early form in which representations were woven. In other words, since belts were among the earliest types of weaving (recall the finds at Çatal Hüyük) which later developed into an extraordinarily elaborate form, the term could have evolved to mean simply “craftsmanship,” losing its early literal meaning of “sash weaving.”

Conclusions

Could the מעשה חשב have been “tapestry”? Our answer is that while tapestry was highly developed, it probably *was not* the method employed, because the widespread term for “tapestry”—“*mardatu*”—was not used.⁶¹

The choice of the phrase מעשה חשב probably indicates a relationship to the equally highly developed art of sash weaving.⁶²

Somehow, the word חשב meaning “belt or girdle” came out of חבש, with its sense of binding or tying. The understanding of מעשה חשב as “craftsmanship” could have come out of the recognition that these sashes were works of extraordinarily skilled designers. More research is needed to understand whether the term מעשה חשב was specific as to the technique the weaver-craftsman was to use (i.e., sash weaving), or whether it had already developed beyond this literal meaning to take on the sense of “craftsmanship” as it is translated today.

Appendix 1: Interpretations of מעשה חשב in Exod. 26:1⁶³

1. “Cherubim were formed in them (the drapes) through weaving, and not through embroidery, which is done through needlework. But, rather, by weaving on two sides, one image on one side and another image on the other side, a lion on this

de cette image est souvent placé au milieu des “carrés” si nombreux dans le décor des textiles du premier group”; Barrelet, “Un Inventaire,” 88.

59. Everett Fox, *The Schocken Bible: Volume 1—The Five Books of Moses* (New York, 1995), 405.

60. W. Gunther Plaut, *The Torah: A Modern Commentary* (New York, 1981), 612.

61. Dr. Edward Greenstein (pers. comm., June 17, 2003) notes that since *mardatu* is a loanword in Akkadian from the West (CAD M/1, 278), it is all the more odd that it does not show up in West Semitic.

62. Thus our conclusion agrees largely with Rashi, even to the possibility that the sashes were double-faced.

63. Translations of מעשה חשב are rendered in bold italics.

side and an eagle on the other side, just as silken belts are woven (nowadays), which are called *feises* (woven images) in Old French.”⁶⁴

2. “With cherubim *the work of the skilful workman* shalt thou make them.”⁶⁵
3. “Or ‘*work of a designer*’ or ‘*pattern-weaver*’; work requiring exceptional skill. The traditional explanation is that in this class of work a design appeared on both sides of the fabric.”⁶⁶
4. “Mit Cheruben, *in Planwirkers Machweise*, sollst du sie machen.”⁶⁷
5. “Literally ‘cherubs, *the work of a thinker/designer*’, that is, of a creative and imaginative artist. This phrase apparently refers to some highly specialized technique of weaving, different from that mentioned in verses 36 and 28:32. Yoma 72b records a difference of opinion on the meaning of the technical terms. One view holds that double-faced weaving is intended; that is, the design is so woven into the fabric as to appear the same on both sides. The other view has different designs on the obverse and reverse. Ibn Ezra suggests that the linen fabric was decorated with ink or pigment. Examples of such are, in fact, well known from ancient Egypt (citing Forbes).”⁶⁸
6. “With sphinxes, *of designer’s making*, you are to make it,”⁶⁹ i.e., “*according to the designer’s craft*.”⁷⁰
7. “With cherubim *skillfully worked* into them.”⁷¹
8. “With cherubim *worked on them, all made by a seamster*.”⁷²
9. “With cherubim *embroidered on them*.”⁷³
10. “You will have them *embroidered* with great winged creatures.”⁷⁴

64. Rashi in Avrohom Davis, *Shemos* (vol. 2 of *The Metsudah Chumash/Rashi*: Hoboken, N.J., 1997), 388. As far as “*feises*” is concerned, the term appears to be out of circulation. Chantal Rouquet, Conservateur des Musées d’Art et d’Histoire de Troyes, writes that she is unaware of the word (pers. comm., March 8, 2002). Neither Monique Blanc, Curator of Medieval Arts at the Musée des Arts Décoratifs, nor Jean-Paul Leclercq, Curator of Medieval Arts at the Musée de la Mode et du Textile, both of Paris, was able to shed any light on it (pers. comm.). Rashi seems to indicate that the technique was ancient in his time, but whether it was available in our period is unclear.

65. JPS, *The Holy Scriptures* (Philadelphia, 1966), 95.

66. Hertz, *The Pentateuch and Haftorahs*, 330n.

67. Martin Buber and Franz Rosenzweig, *Die Fünf Bücher der Weisung* (Berlin, 1930), 249.

68. Sarna, *The JPS Torah Commentary: Exodus*, 167n.

69. Fox, *Schocken Bible*, 405.

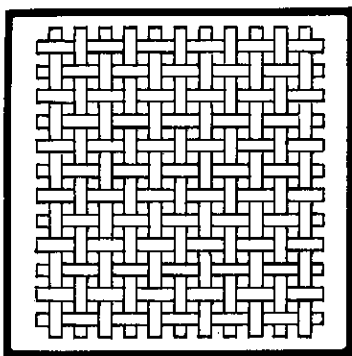
70. *Ibid.*, 405n.

71. NRSV.

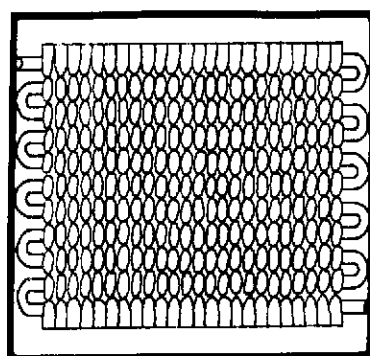
72. Revised English Bible.

73. New American Bible.

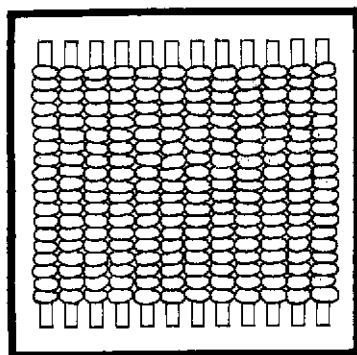
74. New Jerusalem Bible.



Balanced Plain Weave



Warp-faced Plain Weave



Weft-faced Plain Weave

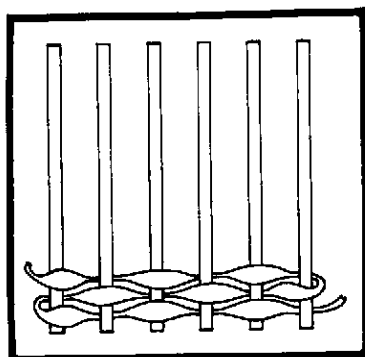
Diagram 1: Plain Weave: Balanced, Warp-faced, Weft-faced (courtesy of Nancy Arthur Hoskins, *Weft-Faced Pattern Weaves*, 10)

Appendix 2: Types of Work in Exodus⁷⁵

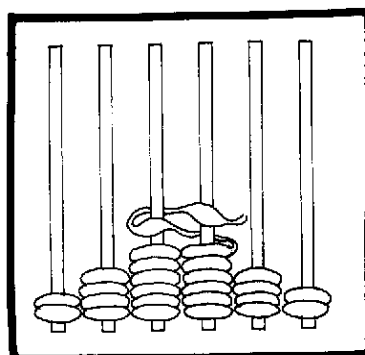
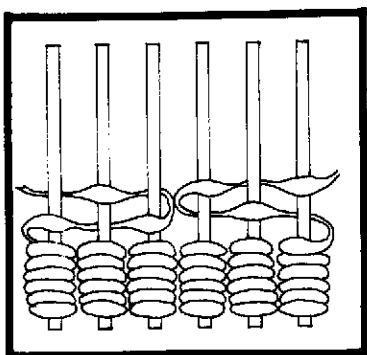
Hebrew	English ⁷⁶	Citations in Exodus
מעשה חשב	See Appendix 1	26:1,31; 28:6,15; 39:3,8; 36:8,35
מעשה רקם	Embroidery	26:36; 27:16; 28:39; 36:37; 38:18; 39:29
מעשה רשת נחשת	Meshwork in copper	27:4; 38:4
מעשה חרש אבן	Work of a lapidary	28:11
מעשה עבת	Corded work	28:14,22; 39:15
מעשה ארג	Woven work	28:32; 39:22,27
מעשה רקח	Expertly blended	30:25,35

75. A. Even-Shoshan, *קונקורנציה חדשה* (Jerusalem, 1988), 691.

76. NJPS.



Weft-faced Pattern Weave (note continuous weft)



Tapestry Weaves (note discontinuous wefts)

Diagram 2: Weft-faced Pattern Weave vs. Tapestry Weaves (courtesy of Nancy Arthur Hoskins, *Weft-Faced Pattern Weaves*, 13)

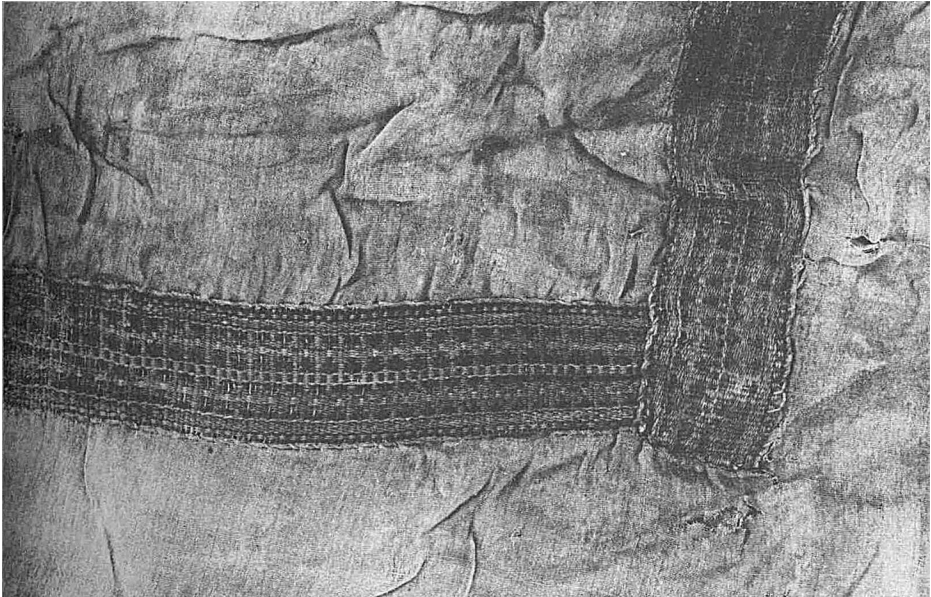


Figure 1: Example of rep weave—Horsecloth of Senmut (Barber, *Prehistoric Textiles*, 157)

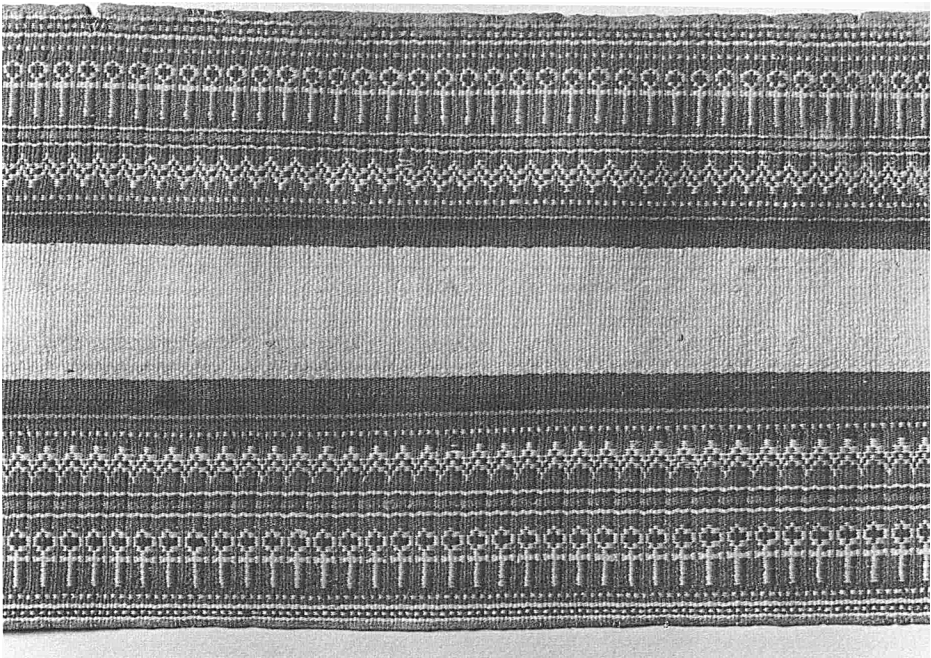


Figure 2: Example of tablet-weaving—Girdle of Rameses III (courtesy of The Trustees of the National Museums, Liverpool; Barber, *Prehistoric Textiles*, 120)

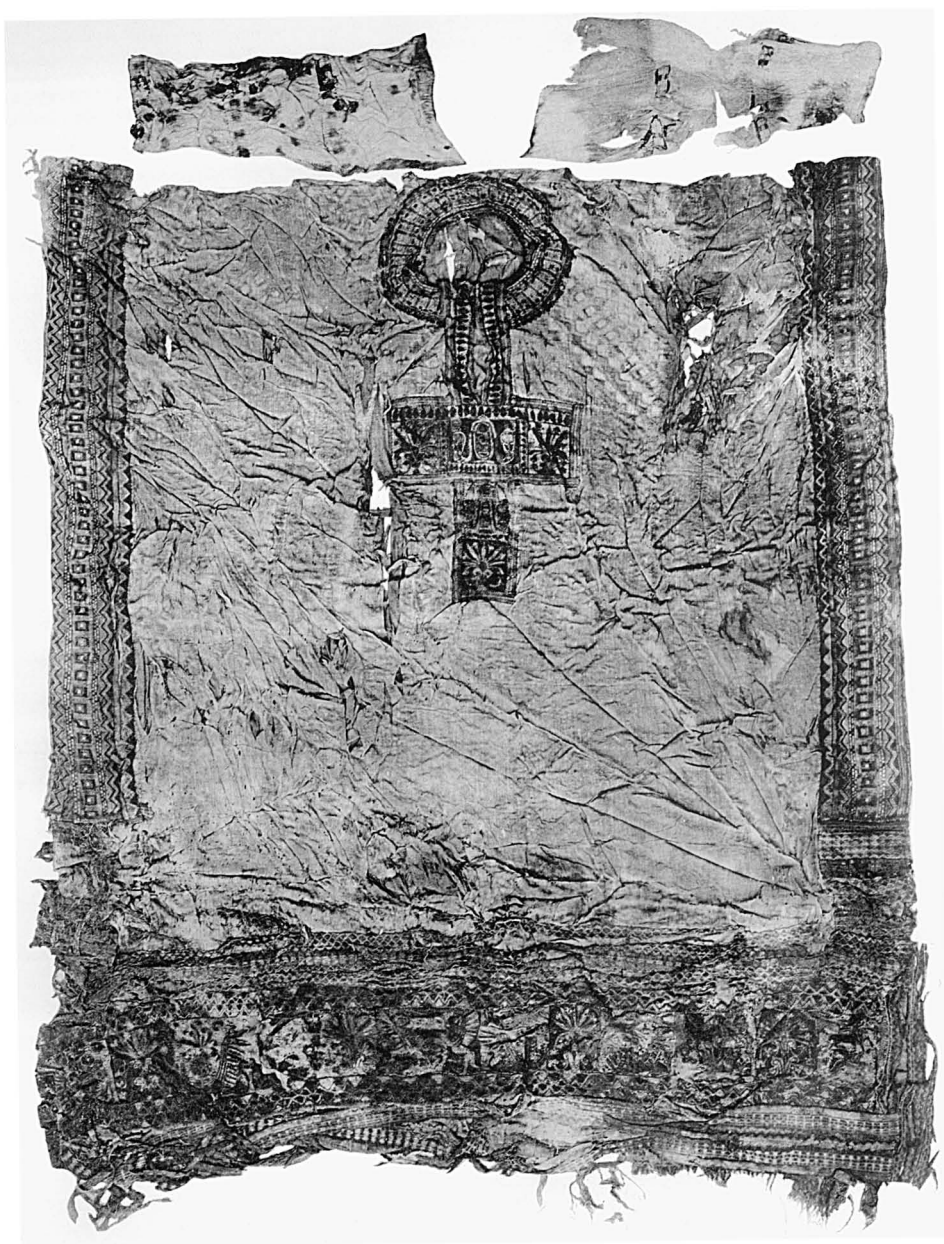


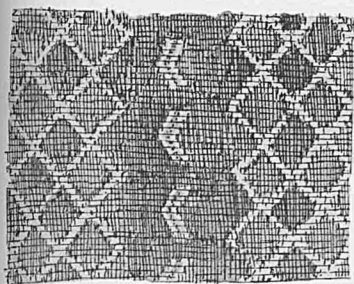
Figure 3: Example of weft-faced weaving—Tunic of Tutankhamun (Crowfoot and Davies, “Tunic,” Plate XIV)



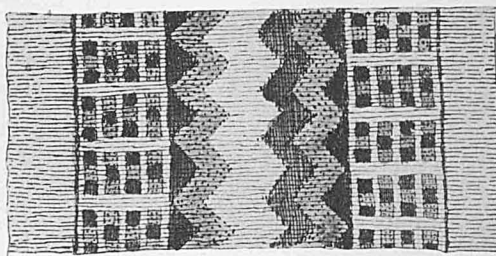
1. Band No. 5, border



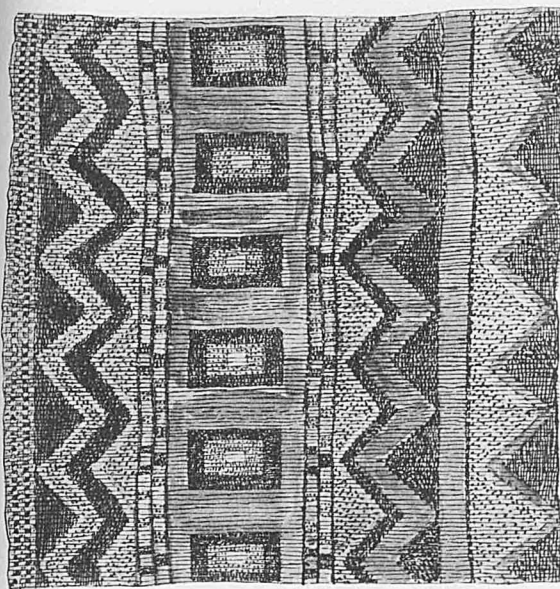
2. Band No. 5, part



3. Band No. 2



4. Band No. 3



5. Band No. 1, from left side of Tunic



6. Band No. 1, from right side of Tunic

Figure 4: Examples of weft-faced weaving—Woven bands from tunic of Tutankhamun (Crowfoot and Davies, "Tunic," Plate XV)

1. Band No. 5, border

3. Band No. 2

5. Band No. 1, from left side of Tunic

2. Band No. 5, part

4. Band No. 3

6. Band No. 1, from right side of Tunic



Figure 5: Example of tapestry—Linen fragments from the tomb of Thutmose IV (Barber, *Prehistoric Textiles*, Color Plate 1)



Figure 6: Stone sculpture with possible symbolic detail (Barrelet, "Un Inventaire," 80)