

Part I

**Performance in Prehistory
and Antiquity**

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Singing the Rug: Patterned Textiles and the Origins of Indo-European Metrical Poetry

Anthony Tuck

They stood there in the forecourt of the goddess with the glorious hair, and heard Circe inside singing in a sweet voice as she went up and down a great design on a loom, immortal such as goddess have, delicate and lovely and glorious their work. Now Polites leader of men, who was best and dearest to me of my friends, began the discussion: "Friends someone inside going up and down a great piece of weaving is singing sweetly, and the whole place murmurs to the echo of it, whether she is woman or goddess. Come, let us call her our."¹

But in the more remote sections, and among the nomads, women do all the weaving. They are the designers, too. They invent from year to year all the modifications of the old patterns. The head woman, the traveler Vámbéry relates, makes a tracing upon the earth, doles out the wool, and in some of the tribes chants in a weird

sing-song the number of stitches and the color in which they are to be filled, as the work goes on.²

Although these passages are separated by considerable distances of time and literary purpose, the common element of singing while weaving is immediately curious. Indeed, the association between the two activities is by no means limited to the texts above, suggesting something more than merely a casual relationship. Throughout the text of the *Odyssey*, passages describing women observed in the act of weaving contain this notable detail. For example, Calypso also sings while she weaves. As Hermes speeds down from Olympus to inform Calypso of Zeus' plan for Odysseus, the text describes her while weaving.³

This consistent pairing of weaving and singing in the *Odyssey* has not garnered much academic

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attention. However, observation of modern-day weaving and rug production in nonmechanized households in Central Asia, Anatolia, and India suggests a greater significance to the songs Homer's nymphs sing while they weave.

John Mumford's quote above describes a "weird sing-song" related to the number of threads and colors of a given rug's design. In this case, the textiles Mumford discusses are knotted pile rugs, with knots tied onto neighboring pairs of warp threads between successive rows of the weft. Groupings of knots of the same color, organized according to the grid system of the warp and weft, form the various traditional designs of this type of textile. The traveler Mumford alludes to is Arminius Vámbéry, a Hungarian adventurer and Central Asian spy for the British during the early decades of the 19th century. Vámbéry's description of rug manufacture in Turkmenistan illustrates that specific designs of a carpet are reduced to numeric code once the overall compositional plan is complete: "An old woman places herself at their head as directress. She first traces, with points, the pattern of the figures in the sand. Glancing at this, she gives out the number of different threads required to produce the desired figures."⁴

Such 19th-century descriptions of textile manufacture indicate that traditional weaving practices in some regions of Central Asia and Persia involved the repetition of songs that communicate to a group of weavers specific information regarding thread or knot color and its relevant count position on the warp of a loom. Indeed, virtually any pattern or design that is incorporated into the weave of a textile can be reduced to numeric sequences, given the gridlike structure of warp and weft threads of a piece of cloth. Recent analysis of Caucasian textiles demonstrates how such designs are structured as count sequences.

For example, the design motif called the *balagyvrym* (small scroll) is not produced from memory as an overall design but rather as a count sequence. The weaver, traditionally a girl or woman, would knot once in the outline color, pass over seven warp threads, and knot again in the outline color. Further along the weft of the same register, the sequence is continued. On the next register, the knot sequence begins with one knot opening forward and

another opening backward in conjunction with the knots of the previous register. However, the weaver could produce the *balagyvrym* only by a counting system based on the design's original starting position. Once the design turns at a right angle, the count sequence is changed. As a result, the ornamental components of traditional Caucasian carpets are woven exclusively in one position.⁵

In regions of Central Asia and rural northern India, these count sequences still take the form of songs, committed to memory by women of any given household where patterned textiles are produced. Even the nontraditional designs of an enigmatic group of Afghan carpets called *aksi*, or picture, rugs utilize coded rhythmic structures to translate images into woven patterns. *Aksi* rugs, which first came to a broader audience in the 1980s, are often called Afghan "war rugs." This class of textiles responds to the environment surrounding them, incorporating designs of Soviet weaponry, including helicopters, MiG jets, rifles, and hand grenades. While some of these weapon motifs appear to be based on traditional design elements, other types clearly are not. For example, since 2002 several weavers in the region outside of Kabul have been producing rugs that may be loosely termed "War on Terror" rugs. Many of the design elements of this new class are also present in earlier forms of war rugs, but others are obviously patterned after specific elements from an altogether different iconographic source – propaganda leaflets dropped from American planes during the course of military action in that country.⁶ In the conversion from a new image on paper to a woven pattern, weavers reduce images to numerical grids that are then remembered and communicated throughout the course of production in the form of a chantlike song, perhaps akin to the one Mumford mentions.⁷ Similar means of pattern reproduction are still used in rural areas of northern India.⁸ However, in these regions, design traditions appear much more static than the Afghan *aksi* rug phenomenon, suggesting the specific numerical sequences and the songlike structures used to remember and communicate them can be equally static.⁹

These modern examples of women weavers in India and Central Asia suggest that the nymphs in the *Odyssey* sing because the cloths

they produce are patterned textiles. In fact, the passage from Book 10 quoted above states specifically that Circe weaves a “great design.” Moreover, this passage also indicates that Polites is outside Circe’s house when he speaks, yet he knows that she is weaving. In fact, he seems to recognize that she is weaving not from what he sees but rather from what he hears – her singing.¹⁰

The study of the relationship between this phenomenon and The processes of manufacture of patterned cloth in antiquity, especially from the Mediterranean, is somewhat limited by the scarcity of surviving examples of ancient textiles and the fundamentally oral nature of such mnemonic devices for recording pattern information. While the climate of the African and Levantine deserts, the salt mines of Austria, and the bogs of northern Europe are considerably more forgiving to cloth, scholars of the Mediterranean basin can usually only speculate on the form and design of textiles from that region. Linear B documents from the Late Bronze Age palace of Knossos report an annual tally of almost 100,000 castrated male sheep, animals primarily useful in the wool industry.¹¹ The earliest example of a well-preserved patterned textile yet recovered in Greece comes from the “Heroon” structure and its associated burial at Lefkandi, which may be dated to ca. 1050 BCE.¹² The preserved belt of this garment displays patterned decoration similar to depictions of textiles on ceramics as early as 1450 BCE.¹³ Examples of figurines in garments of patterned decoration may push such a manufacturing tradition in the Aegean well into the Greek Middle Bronze Age, perhaps even earlier.¹⁴ Certainly, numerous Archaic and Classical Greek images of weaving, standing looms, as well as patterned textiles, reflect a thriving and remarkably longstanding tradition of the fabrication of patterned, woven cloth.¹⁵

Perhaps the most famous textile of the *Odyssey* is woven on the loom of Penelope. To delay her suitors, Penelope promises to choose one to marry after she completes the funeral cloth for Odysseus’ father Laertes. She begins the work, only to unravel her efforts every evening.¹⁶ Three years pass before the suitors question the pace of her progress, yet the archaeological evidence for looms associated with the Greek

Archaic period suggests that were Penelope fashioning a simple, unadorned winding sheet, little more than a few months would be needed to complete such work.¹⁷ Yet, clearly the cloth is intended for public display. It is part of the publicly visible, ostentatious expense of burial expected of aristocrats. Penelope says:

Young men, my suitors since divine Odysseus has died, wait, although you are pressing for marriage with me, until this cloth I have finished – lest my yarns perish, wasted. This funeral cloth for the hero Laertes, which is for whenever deadly fate shall bring him low – lest any of the Achaian women in the province should fault me, that one who has acquired so much lies without his doth.¹⁸

Concern for the public display of the funeral cloth is also reflected in the prothesis scenes characteristic of Geometric-period vase painting. In these scenes, the cloth, which is depicted as a patterned textile, is lifted to display the body to the collected mourners. Moreover, if the time and industry required of women producing such luxurious textiles were the expectation of aristocratic funerals, it stands to reason that elite members of such communities would also seek to memorialize the design of the impermanent cloth on some other publicly visible and lasting medium. As a result, the emergence of complex geometric designs covering the entirety of burial kraters and amphoras, which often have been thought to represent woven patterns, seems to reflect the desire to display such a prestige item in a more durable form.¹⁹ Indeed, elaborate patterned textiles used as funeral cloths may have been the norm for elite burials throughout the Early Archaic period. However, an oral tradition of mnemonic devices for textile designs recorded in songs such as those of the *Odyssey*’s nymphs would likely end with the passage of anti-sumptuary laws designed to curtail such, public displays of wealth in burial.²⁰

Considering that the *balagyvrytm* design described above is merely one of the simplest in the repertoire of motifs available to the Caucasian textile worker, a song associated with both the number of “stitches” and knot color for an entire rug might be complicated

indeed.²¹ Presumably, traditional designs of increased complexity required count sequences of substantially greater nuance, all of which, in the absence of some other form of recording, would need to be committed to memory by the weaver.²²

For example, a hypothetical design of a lozenge similar to, although simpler than, the design preserved on a fragment of cloth from the Phrygian city of Gordion demonstrates the numerical complexity of this process.²³ The design element of the single lozenge is created by passing over or under the warp threads in a specific sequence. Therefore, the individual strings of the warp are represented in groups according to the numerical values associated with portions of the design. The particular design and all its surrounding elements must be numerically deduced prior to initiating the weaving process, since the symmetry of the design is entirely dependent on the number of threads of the loom's warp.²⁴ The graphic depiction of the lozenge (Figure 1.1), therefore,

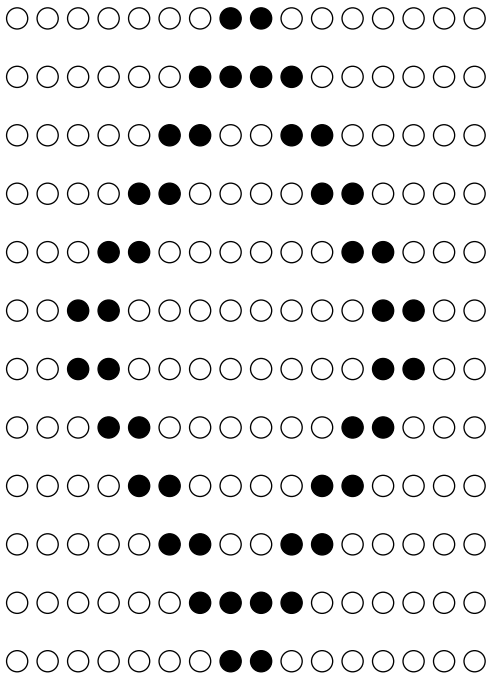


Figure 1.1 Design of a lozenge similar to that on a cloth fragment from Gordion.

can be reproduced through the following numerical code:

7, 2, 7
 6, 4, 6
 5, 2, 2, 2, 5
 4, 2, 4, 2, 4
 3, 2, 6, 2, 3
 2, 2, 8, 2, 2
 2, 2, 8, 2, 2
 3, 2, 6, 2, 3
 4, 2, 4, 2, 4
 5, 2, 2, 2, 5
 6, 4, 6
 7, 2, 7

While the technical processes of manufacturing a textile pattern on a warp-weighted loom vary somewhat from that of a knotted pile rug, such a numerical sequence could still be applied for either technique. Rather than counting threads on the warp and passing weft threads over or under the warp, a knotted pile carpet would require distinctions of color as knots are tied onto successive pairs of warp threads. Regardless, the result as illustrated reflects a pattern that is both visually and numerically symmetrical.

Another example of such a pattern is the traditional fret (Figure 1.2). Here, again, the pattern can be reduced to a numerical sequence:

2, 4, 8, 4, 8, 4, 8, 4, 8, 4, 2
 2, 4, 8, 4, 8, 4, 8, 4, 8, 4, 2
 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2
 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2
 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2
 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2
 8, 4, 8, 4, 8, 4, 8, 4, 8
 8, 4, 8, 4, 8, 4, 8, 4, 8

Theoretically, the elements of the pattern break *down* into repeating phrases, as demonstrated in Figure 1.3. However, the weaver could not numerically express the textile design in such independent units, since the design is not composed of separate vertical elements but rather through the positional interrelationship

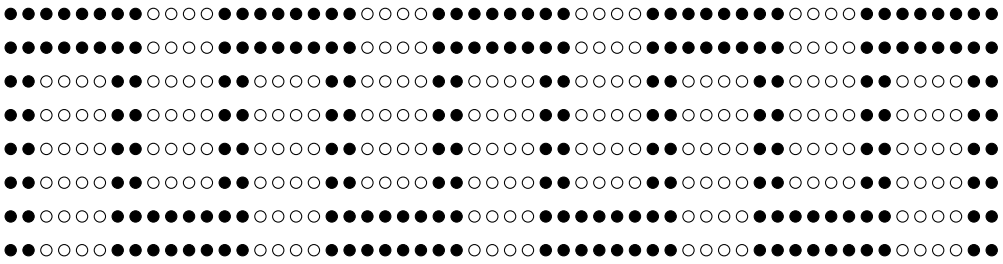


Figure 1.2 A traditional fret pattern.

of each entire horizontal line of the textile’s weft. Therefore, the successful representation of a simple fret or meander design extending the length of a textile would require that the correct numerical sequence be expressed in its entirety and horizontally across the length of the loom’s warp.

The potential complexity of numerical sequences for such designs is not limited to repetitive numerical counts, changing according to shifts in woven patterns with each register of the textile’s weft. Textiles manufactured with bichrome threads might necessitate the memorization of such sequences, but the additional element of threads of variable colors would likewise require that further pieces of information be recorded within the overall numerical framework of the textile’s manufacture. Complex patterned textiles would call for long strings of number sequences, all of which would require not only memorization of repeating patterns of numbers along the horizontal axis of a loom’s warp but also the correct relationship of a given line of numbers

to that which proceeds and follows it in sequence.²⁵ The songs thus appear to be mnemonic devices communicating this information. Without further study it is difficult to know precisely how these songs fully record such designs.²⁶ However, information embedded within narrative structures, tonal shifts, or rhythmic changes, all in association with song, could conceivably provide the framework whereby the memorization and, equally important, the organization of numerical count sequences and color codes that are repeated each time a pattern is reproduced.²⁷

But why would the characters of nymphs in Homeric Greek and modern weavers from Anatolia and Central Asia, separated as they are by vast gulfs of time and space, share this tradition? Perhaps these women sing as they weave because they share, however remotely, a textile tradition that stems from a time and region associated with the earliest roots of the Indo-European family of languages. In spite of the limitations of evidence, it is well established that patterned textiles do not originate in Greece,

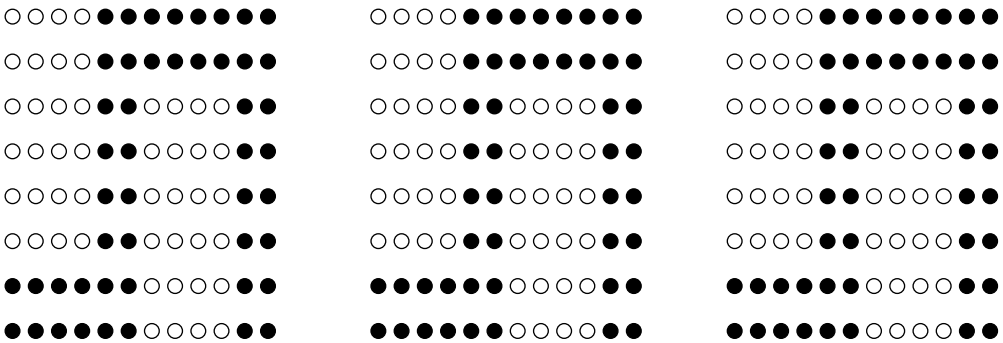


Figure 1.3 Example of the repeating phrases of a fret pattern.

nor, it would seem, do the songlike structures used to record and communicate pattern-related information in textile manufacture.

The oldest preserved example of a knotted pile carpet with figural designs was recovered from the permafrost of a kurgan burial in modern-day Kazakhstan and survives in the Hermitage Museum.²⁸ This elegant carpet is knotted with 32 symmetrical, or “Gordian” style, knots per cm² and displays polychrome designs of mounted figures and parading animals framing a central field of star-shaped floral patterns, notable sophistication of this rug surely reflects a well-developed tradition of such production.²⁹ Additional fragmentary knotted pile textiles come from these same kurgan burials, although most are thoroughly published.³⁰

Numerous examples of proto-Celtic patterned textiles survive from the salt mines of Hallstatt Hallein and generally date to ca. 1000–400 BCE.³¹ This group of cloth frequently displays plaid twills similar to the tartans manufactured in the regions of Europe where communities of Celtic descent survive today, further underscoring the tenacity of many textile traditions.³²

While there is little direct evidence of similarly ornate and intact textiles of earlier dates, an Assyrian archival document of the late 13th century BCE. from the reign of Tukuld-Ninurta describes the gift of two multicolored textiles, one of which is described as covered with designs of people, towns, and animals. This first textile is described as the work of a weaver, while the second cloth is noted as the work of a “knotter.”³³

Slightly earlier still are numerous examples of curved blades recovered from female burials in southern Turkmenistan dating to between ca. 2100 and 2000 BCE. According to their excavator, these blades are identical in form to knives used today in the same region to trim the excess wool threads of knotted carpets.³⁴ Fragments, impressions, and representations of twills and weft-faced weaves³⁵ displaying design elements suggest such fabrics developed in the Levant and the Caucasus at least as early as 2600 BCE.³⁶ Although highly fragmentary, traces of Majkop culture textiles preserving elements of patterning are known from the

region between the Black and Caspian Seas and date to ca. 3700–3200 BCE., an area and time frame curiously coincident with the region many scholars prefer for the first emergence of speakers of the proto-Indo-European language.³⁷

At a minimum, these surviving examples illustrate that complex patterned textiles were manufactured as early as the third or fourth millennium BCE. While we can say very little about how these surviving specimens were manufactured, the numerical elements of their designs, dependent on prescribed intervals of warp and weft threads, remain consistent from their earliest manufacture onward. Even so, a relationship between weaving and song may be found in a text considerably older than the *Odyssey*: the Sanskrit *Rig Veda*. No consensus has emerged as to an absolute date for the composition of the *Rig Veda*, with scholars positing a long tradition of fixed oral transmission prior to the final written form of the hymns.³⁸ In spite of this chronological uncertainty, several instances of the pairing of song and weaving are found throughout the text. For example, “[t]he Man stretches the warp and draws the weft; the Man has spread it out upon this dome of the sky. These are the pegs, that are fastened in place; they made the melodies into the shuttles for weaving.”³⁹

Regardless of the difficulties associated with the date of the *Rig Veda*, there is scholarly agreement that the hymns were fully memorized, without significant revision, before ultimately being transcribed.⁴⁰ For the purposes of this discussion, it seems significant that the “melodies” appear to be the active agent of this element of the creation myth, suggesting once again that the relationship is significantly more than casual.

In Book 2 of the *Rig Veda*, another instance of the pairing of song and weaving appears: “Loose me from sin as from a bond that binds me: may we swell, Varuna, thy spring of Order. Let not my thread, while I weave song, be severed, nor my work’s sum, before the time, be shattered.”⁴¹ And, once again, in Book 9 we have the following: “They for the Bold and Lovely One ply manly vigour like a bow: joyous, in front of songs they weave bright raiment for the Lord Divine.”⁴²

In all three of these instances, the association between weaving and song appears to be more than metaphorical, with song an expected and active element in the production of textiles. Even the “bright raiment for the Lord Divine” hints at the idea of design or patterning. Therefore, although the absolute date of the *Rig Veda* is unclear, ancient examples of the pairing of patterned textiles and songlike structures is not limited to the world of Homer but instead appears to have a far wider orbit. While the evidence of that orbit ranges across Europe, Anatolia, and Central Asia, the examples of this phenomenon share a significant feature: all are associated with regions where the dominant population speaks or spoke languages of the Indo-European family. In fact, Barber has noted that the striking similarity between Bronze Age twill-weave wool fabrics of the Indo-European-speaking proto-Tocharian or Iranian populations of the Tarim Basin in western China and proto-Hallstatt twills of Late Bronze Age Europe are sufficiently similar as to suggest that both populations, upon migrating from the region between the Black and Caspian Seas, carried with them culturally shared technologies associated with weaving such patterned textiles.⁴³ It is inviting to speculate that the Indo-European population migration, regardless of the exact dates of the various movements, brought not only technologies associated with patterned textile production but also the tradition of mnemonic devices used to record design information in the form of song.⁴⁴ As a result, women in the traditional and highly conservative communities in Afghanistan, Anatolia, Iran, and northern India retained this system of textile design production, in some cases to the present day.⁴⁵

Suggestions of similar traditions are also found outside the Indo-European linguistic sphere. For example, one of the taboos associated with the Navajo traditions of weaving states, “Don’t weave if you don’t know a weaving song. It won’t be any good.”⁴⁶ This directive does not make clear the relationship between the song and the woven pattern and may be more closely associated with religious and medical rituals related to sand painting, a graphic form closely tied to Navajo rug manufacture.⁴⁷ Nonetheless, the relationship

between song and textile suggested in the Navajo as well as some African cultures might suggest the independent evolution of similar strategies of mnemonic devices in weaving traditions.⁴⁸

Song or chant systems designed around prescribed and repetitive numerical structures to convey coded, pattern-related textile information is a curious phenomenon in its own right. However, such systems certainly invite comparison with another form of numerically derived recitation: metrical poetry. For this reason, it is all the more remarkable that the process of reciting early Greek epic poetry is frequently associated with weaving.⁴⁹ The recitation, specifically of Homeric epic, by individuals known as rhapsodes hints at a relationship to textiles. The name appears to develop into a compound word derived from $\rho\acute{\alpha}\pi\tau\epsilon\iota\nu\lambda\omicron\upsilon\delta\acute{\eta}\nu$ ($\rho\acute{\alpha}\pi\tau\epsilon\iota\nu$ = to stitch or to sew; $\lambda\omicron\upsilon\delta\acute{\eta}\nu$ = song), a phrase that suggests that the recitation of an element of Homeric epic was to “stitch” or “sew” a song.⁵⁰

The relationship between traditional Greek recitation of metrical poetry and weaving in particular is expressed elsewhere. For example, Callimachus (fr. 26.5) refers to the recited poem itself as “[t]he word that was woven upon the staff,” which, as West notes, “suggests an analogy between the [rhapsode’s] staff and the cross bar of a loom.”⁵¹ The theme of poetry as a woven phenomenon also occurs in Pindar (*Nem.* 4.44–6): “Weave out, weave out forthwith, sweet lyre, the web of lovely song with Lydian harmony, in honor of Oenone and of Cyprus, where Teucer, son of Telamon, reigneth afar.”⁵²

Again, a similar metaphor is used twice by Bacchylides (*Odes* 5 and 19):

Blessed war-lord of the chariot whirling
Syracusans, you if any mortal now alive will
rightly assess the sweet gift of the violet-
crowned Muses sent for your adornment:
rest your righteous mind in ease from its
cares and come! Turn your thoughts this
way: with the help of the slim-wasted Graces
your guest friend, the famous servant of Urania
with her golden headband, has woven a song of
praise and sends it from the sacred island to
your distinguished city.⁵³

Countless paths of ambrosial verses lie open for him who obtains gifts from Pierian Muses and whose songs are clothed with honour by the violet-eyed maidens, the garland-bearing Graces. Weave, then, in lovely, blessed Athens a new fabric, renowned Cean fantasy.⁵⁴

One might argue that the thematic relationship between singing and weaving is merely an effect of the casual similarity of a loom and a lyre, both of which consist of frames for the tension of strings.⁵⁵ However, the idea of poetry and song as something woven is not limited to Greek; it has earlier, proto-Indo-European roots, suggesting that the thematic relationship between poetry and weaving existed well before the development of the lyre as an instrument to accompany poetic recitation.⁵⁶

Another historical anecdote seems to underscore the relationship of European and Central Asian patterned textiles and songlike mnemonic devices to populations of Indo-European language speakers. The long history of the manufacture of textiles in Egypt was generally limited to the production of white linen.⁵⁷ However, the 18th-Dynasty invasion of the Levant, led by Thutmose III, culminated with the destruction of the city of Meggido. Among the war booty captured in the victory were artisan slaves. Patterned textiles, as opposed to embroidered or beaded cloth, are largely unknown from Egypt prior to the 18th Dynasty but appear at this time.⁵⁸ One wonders if the emergent production of patterned textiles in Egypt might not be related to this group of weavers conquered at Meggido and brought back to Egypt as captives. Moreover, a 19th-Dynasty Egyptian lament records the following:

Lo, citizens are put to the grindstones,
Wearers of fine linen are beaten with [sticks]
Ladies suffer like maidservants,
Singers are at the looms in weaving rooms,
What they sing to the goddess are dirges.⁵⁹

Although the precise date of the composition of this lament is debatable, the association between weavers and singing once again raises

speculation that such weavers, perhaps descendents of the survivors of Thutmose's Syrian campaign, sing as a means of transmitting designs into woven fabric.

Indeed, the origin of pattern-weave textiles, although difficult to place with great precision due to the scarcity of surviving examples, appears to be centered in regions of Europe and Asia where Indo-European language groups are also predominant.⁶⁰ The presence of wool as a primary fiber in the regions of Syria and the Caucasus also gave rise to the opportunity to experiment with dyes, thus opening the path to color as a means of pattern production. Such an option was not available to the Neolithic and Early Bronze Age Egyptian weaver, who was limited to flax fibers, and linen is notoriously difficult to dye.⁶¹

As mentioned above, the similarity of twill-pattern weaves between Austrian Iron Age Hallstatt cloth and specimens from western China of Bronze Age Tarim Basin cloth appears to be due to a common tradition of twill manufacture among the proto-Indo-European language speakers ancestral to both the Celtic and Tocharian/Iranian populations.⁶² Apparently, communities of the proto-Indo-European homeland already possessed developed systems of patterned textile production prior to the periods of migration associated with the spread of the Indo-European languages.⁶³ As these populations settled in regions of Anatolia, Central Asia, India, and western Europe, they could well have preserved a custom associated with textile production whereby numerically organized design information was retained by weavers through number-based systems of chant or songlike mnemonic devices ancestral to the singing of Homer's nymphs and the songs of Central Asia and northern India witnessed in the modern era.

Conceivably, these numerically organized songs, utilized by populations descended from proto-Indo-European speakers to convey information related to patterning in textile manufacture, may also explain why the notion of reciting metrical poetry is so often expressed through the metaphor of weaving in Indo-European languages.⁶⁴ Meillet's reconstruction of a system of meter common, and therefore ancestral, to both Greek and Sanskrit serves to

explain poetic metrical constructions shared across a wide range of Indo-European languages.⁶⁵ Nagy, in challenging Parry's definition of formula as word groupings regularly employed under the same metrical conditions, sees traditional phraseology, whether in the form of prayers, incantations, or the like, containing its own rhythms. Over time, the strength of tradition contributes to a preference for phrases with some of those rhythms over others that do not possess similar characteristics. Eventually, Nagy concludes, "the preferred rhythms have their own dynamics and become regulators of any incoming non-traditional phraseology."⁶⁶

For Nagy, "traditional phraseology . . . generated meter rather than vice versa."⁶⁷ With respect to language, this is entirely convincing, but it is also true that the strings of a loom's warp would provide count sequences limited to and bound by the number of vertical threads associated with a given element of an overall pattern, not unlike a poetic metrical system with lines of a prescribed number of prominent positions. While pattern- and color-related information could be transmitted through many different elements of song (e.g., narration, tonal values of music, rhythmic shifts, etc.), the development of metrical systems of recitation would be another possible way to encode weaving-related information in song. Therefore, Nagy's reconstruction of metrical formulation could be applied in equal measure to specific design elements as they evolved in the development of patterned textiles among speakers of proto-Indo-European. In considering Nagy, Foley argues, "even if the habitual groupings originally generated the abstract pattern, later on (as Nagy suggests) the abstract pattern came to govern the deployment of phraseology."⁶⁸ In the same manner, the development of rhythmic cadences and song associated with particular patterns, such as those memorized by Caucasian weavers or Mumford's "weird sing-song," would both control and be controlled by the pattern to which they conform. Therefore, it seems possible that the relationship between metrical structures in proto-Indo-European poetry and the rhythmically communicated number sequences associated with the development of patterned

textiles by members of that same population is more than merely accidental. Instead, counting systems and sing-songs associated with the production of patterns in textiles may have been an extremely early influence on, if not source of, rhythmic or metrically constructed narratives. Given the vast area where this phenomenon is seen, the mechanisms controlling such patterning certainly evolved along differing paths; but modern observation of weaving songs would suggest that some combination of cadence and narrative played roles in this process of pattern communication. Both the region associated with the origin of patterned textiles and the fact that many Indo-European languages preserve suggestions of a relationship between weaving and poetics seem to indicate that this association developed within the chronological orbit of a spoken form of proto-Indo-European.

Finally, it seems worth noting that the *Iliad* and the *Odyssey* begin with exhortations of the Muse, who inspires the poet through the gift of poetic ability as well as with assistance in composition.⁶⁹ However, the opening lines of both the *Iliad* and the *Odyssey* appear to reflect the idea that the Muse sings not to the poet but rather through the poet.

Rage-Goddess, sing the rage of Peleus' son Achilles, murderous, doomed, that cost the Achaeans countless losses, hurling down to the House of Death so many sturdy souls, great fighters souls, but made their bodies carrion, feast for the dogs and birds, and the will of Zeus was moving toward its end. Begin, Muse, when the two first broke and clashed, Agamemnon, lord of men and brilliant Achilles.⁷⁰

And again at the beginning of the *Odyssey*: "Sing to me of the man, Muse, the man of twists and turns driven time and again off course, once he had plundered the hallowed heights of Troy."⁷¹ In both cases, it appears that the poet does not identify himself as the composer of the poem but rather the agent of its performance.⁷² Instead, the origin of the poem itself is entirely outside of the poet; it is from the female Muse herself.⁷³ Given the ancient world's traditional association of

women with weaving, one wonders if perhaps the characterization of the female Muse might be something akin to a mythological memory, already ancient by Homeric standards, of a source of rhythmic, perhaps even metrically structured narratives developed around weaving patterned textiles.⁷⁴

A related element of traditional Greek poetic inspiration is the appeal to Memory, the mother of the Muses and another obvious example of a feminine mythological construct related to the otherwise masculine world of epic poetry and its recitation.⁷⁵ It is again inviting to see a relationship between such a concept and the mnemonic devices of metrical narrative songs used to create patterned textiles.⁷⁶

Further inquiry is needed to better understand the possible relationships between the phenomena of traditional forms of song or chant that communicate woven design and the ancient association of weaving with poetry. Conceivably, a close examination of modern, surviving songs associated with the production of traditional textiles might better explain how cadence, narrative, and possibly meter function as conveyors of coded information. Moreover, the discussion of the relationship between ancient patterned textiles and the origins of proto-Indo-European metrical poetry is hindered by a scarcity of surviving examples of the former and the conjecture required to study the latter. And yet, both Circe and Calypso sing as they work at their looms, a detail that holds immediate and recognizable importance to modern observers of traditional textile production. Perhaps the notion of the rhapsode of Iron Age Greece as a “sewer of songs” was originally something surpassing mere metaphor, at a time when song and cloth were more fully intertwined.

NOTES

- 1 *Od.* 10.220–28; Lattimore 1967, 158.
- 2 Mumford 1900, 25. Mumford fails to offer any further information as to where this specific tradition is found other than to describe the regions as “remote sections,” but based on the text, he appears to refer to regions in Anatolia and Persia. He is,

however, quite clear in contrasting this activity with the “more progressive” modes of manufacture found in developed areas. These modes are probably pattern books or printed templates for designs, although he does not specify his meaning on this point.

- 3 *Od.* 5.59–62: “A great fire blazed on the hearth and the smell of cedar cleanly split and sweet wood burning bright wafted a cloud of fragrance down the island. Deep inside she sang, the goddess Calypso, lifting her breathtaking voice as she guided back and forth before her loom, her golden shuttle weaving” (Lattimore 1967, 89).
- 4 Vámbéry 1970, 474.
- 5 Kerimov et al. 1984, 12. Seiler-Baldinger (1994, 57) indicates that this technique of rug manufacture is a version of weft wrapping, often referred to as *soumak*.
- 6 Designs such as the border element of many of these rugs are often taken from the leaflets, as are fragmented elements of English they frequently include.
- 7 In a correspondence with an Afghan weaver based near Kabul, the author asked her how she transformed images into rug patterns. Her response, through a translator, was: “I don’t see it as a picture. I see it as numbers and I make it a song.”
- 8 While traveling in northern India, the author witnessed weavers chanting while tying knotted pile rugs. In the town of Sari Bawadi, several households had set up large looms in their forecourts. Younger members of each family worked knotting rugs while one woman sat to the loom’s side chanting. When asked about the chanting, the guide replied, “She is singing the rug.”
- 9 The rug designs typical of this region are primarily Moghul style, suggesting the specific mnemonic means of reproducing such patterns may be as much as five centuries old.
- 10 I am grateful to Mahoney for this observation.
- 11 Killin 1964, 1–15; Barber 1992, 104.
- 12 Popham et al. 1982, 173.
- 13 Barber 1991, 312–13; 1992, 104.
- 14 Pekridou-Gorecki 1989, 56–71; Barber 1991, 311–57.
- 15 An important and informative depiction of operational looms is found in the work of the Amasis Painter, a black-figure lekythos currently in New York (see von Bothmer

- 1985, 185–87). For the Chiusi Painter image of Penelope at her loom, see Geijer 1977. Consider as well the described complexity of a woven garment such as the peplos of Athena, woven on the occasion of the Panathenaic festival (Barber 1992, 103–17).
- 16 The text never describes Penelope in the act of weaving but rather has her reporting her stratagem only after the fact.
- 17 *Od.* 2.96–102; Barber 1991, 358–59.
- 18 Barber 1991, 358.
- 19 Barber 1991, 365–72. Such densely packed designs are characteristic of the weft float technique wherein weavers take weft threads over a specific number of differently colored warp threads at varying intervals to produce designs. However, such a technique necessarily produces design elements spaced very close together, since long weft threads jumping over warp threads create the possibility of snagging.
- 20 Gagarin 1986, 67.
- 21 Since Mumford’s (supra n. 2) commentary is concerned with pile carpets, his use of the term “stitches” must refer to knots rather than some form of embroidery.
- 22 In modern, mechanized workshops in India and Anatolia, designs are reproduced through a color chart, rendered on paper and attached to the lower portion of the loom. This, however, is a relatively recent development designed to increase the number of workers capable of producing rugs of traditional design. However, even Mumford’s (1900) description of the “weird sing-song” contrasts this phenomenon with the rug production techniques of the more developed regions of Anatolia and Persia. Levine (1977, 212) describes the creation of pile rugs in Kurdistan as a simple copying process from the back of an older rug and makes no mention of any other associated activity in the process of design or production of such rugs.
- 23 The cloth fragment from Gordion was preserved in a destruction horizon dateable to ca. 690 BCE. (see Ellis 1981, 294–310, pl. 101C–D).
- 24 This type of design construction is also characteristic of Anatolian kilims.
- 25 It is, however, quite easy to imagine the full memorization of such design-related chants.
- Texts of substantial length and complexity, such as the Sanskrit Rig Vedic hymns, appear to have been fully memorized and preserved through sets of mnemonic devices (Nagy 1974, 15–16).
- 26 A full forensic analysis of a weaving song will require recording such a work in its entirety and analyzing the mnemonic device in relation to the pattern it produces. In the process of researching this study, several attempts were made to acquire visas for study in northern Iran and southern Turkmenistan, where reports suggest a surviving tradition of this practice somewhat more nuanced than that witnessed in northern India. However, the political instability in Central Asia currently makes such travel difficult to negotiate.
- 27 According to the author’s translator in Sari Bawadi, India, the “singing the rug” chant communicated some form of story that served both the purpose of the textile design and to entertain the weavers as they worked. Unfortunately, time constraints and barriers of language prohibited further inquiry.
- 28 Rudenko 1953, pl. CXV.
- 29 Rugs of remarkably similar designs are made in Kazakhstan today.
- 30 Rudenko 1970, 302.
- 31 Barber 1991, 186.
- 32 Barber 1991, 138; 1996, 348; 1999, 138.
- 33 Barrelet 1977, 56–62. This description implies that ornate figural designs such as those seen on the Pazyrk carpet were not limited to knotted pile rugs but were incorporated into different forms of woven cloth as well.
- 34 Khlopin 1982, 116–18. Khlopin dates these blades to 1600 to 1400 BCE., but Thomas (1967, Chart 11.5b) places the burials from which they were recovered to the late third millennium. Barber (1991, 171 n. 10) prefers Thomas’ date and points to ceramic fourth- and third-millennium ceramics from the same region that appear to reflect decorative textile patterns.
- 35 Seiler-Baldinger (1994, 89) defines a twill weave: “The main feature of the twill weave is a looser binding of the two yarn systems. Each weft thread passes over/under at least two warp threads and only under/over one warp thread.” The weft-faced weave is a variant of plain weave in which only one

- system of threads, the weft, is visible. Weft-faced and warp-faced weaves are also sometimes called rib waves (Seiler-Baldinger 1994, 88).
- 36 Barber 1996, 348; 1999, 144.
- 37 Shishlina et al. 2003. For commentary on the complex arguments of the proto-Indo-European homeland, see D'Iakonov 1985; Gamkrelidze and Ivanov 1985a, 1985b; Gimbutas 1985; Mallory 1989.
- 38 The oral composition of the *Rig Veda* is generally thought to be considerably older than the date of its first transmission into written form. E.g., Raju (Chan et al. 1969, 13) suggests a date of composition sometime prior to 2000 BCE. Alternatively, O'Flaherty (1988, 1) suggests a date of ca. 1000 BCE. for the hymn's composition. Davis (Lopez 2002, 7) writes that the compilation of verses into a single collection occurs ca. 1200–1000 BCE., but that the original, memorized, and oral transmission, of the hymns may have earlier stages of development, as much as 3,000 years earlier than the date of the *Rig Veda*'s transmission into written form.
- 39 *Rig Veda* 10.130.2; O'Flaherty 1981, 33. I am grateful to Mahoney for directing me to these Sanskrit passages.
- 40 Nagy 1974, 15–16; Jamison 1991, 10–12. Jamison argues that Books 1 and 10 of the *Rig Veda* are later than Books 2 through 9. However, for the purposes of this argument, the association between singing and weaving is found in both chronological groupings of books.
- 41 Griffith 1896, 2.28.5.
- 42 Griffith 1896, 9.99.1.
- 43 Barber 1991, 131–45; 1996, 354–55.
- 44 Barber (1975; 1989; esp. 1991, 260–82) details the linguistic evidence for textile technology among speakers of proto-Indo-European.
- 45 It is curious that the Sanskrit examples cited appear to suggest men involved in the weaving process. In India, weaving is traditionally performed by women, and a preference for male children and a general social disdain for female children metastasizes into a widely held belief that the difficulty of weaving is punishment for being born female (Parikh et al. 1991, 68–9). However, while it is certainly not impossible to imagine men weaving in this environment, it is likely that the masculine cast to these passages related to the Vedic hymns' primary function as religious texts. Certainly, throughout prehistoric Europe and later, weaving is largely an activity performed by women (Ehrenberg 1989, 102–3).
- 46 Bulow 1972, 58. I am grateful to Edmunds for these observations concerning weaving and song-related rituals in Native American and African cultures.
- 47 Armer 1931, 6.
- 48 Ghersi and Basile 2003. E.g., in the village of Klikor, Ghana, a close relationship between ritual song and textile is seen during an event to honor an Italian diplomatic mission. "They bring along their best cloths and instruments, both textile and musical. To the accompaniment of a sacred weaving song, they weave and dance before their traditional kings, before the diplomatic representatives and a delegation from the Italian government."
- 49 West 1981, 124–25. See Nagy (2002, 70–98) for a comprehensive treatment of this association.
- 50 Burkert 1987, 48; Scheid and Svenbro 1996, 111–13.
- 51 West 1981, 125. West's "cross bar" presumably refers to the heddle bar of a loom.
- 52 Sandys 1915, 349–51.
- 53 Campbell 1992, 139.
- 54 Campbell 1992, 233.
- 55 Synder 1981, 193–94.
- 56 Schmitt 1973, 272–74. E.g., the same metaphor is present in the Sanskrit *Rig Veda* (Griffith 1896, 10.53.6): "Spinning the thread, follow the region's splendid light: guard thou the path ways well which wisdom hath prepared. Weave ye the knotless labour of the bards who sing: be Manu thou, and bring the Heavenly People forth."
- 57 Barber 1982, 442; 1991, 351–53. Barber argues that the rare and unusual evidence for patterned wool textiles in Egypt reflects the presence or influence of non-Egyptians in the region.
- 58 Reifstahl 1944, 1.
- 59 Simpson 2003, 194–95. This passage, from a text known as *The Admonitions of Ipuwer*, is highly problematic. The papyrus on which the lament is recorded dates to the 19th Dynasty, but some scholars date the original text as early as the 12th Dynasty. However,

- the surviving papyrus appears to record numerous errors and omissions in transcription (Simpson 2003, 188). As a result, its value for the purposes of this argument is somewhat diminished. I am grateful to Peter Der Manuelian for his insights on this text.
- 60 Barber 1991, 211.
- 61 Barber 1991, 211.
- 62 Barber 1991, 144; 1996.
- 63 For a general survey of the various difficulties associated with the questions of the proto-Indo-European homeland and the period of migrations, see Renfrew 1988; Mallory 1989; Jones-Bley and Huld 1996, 1–22. For a summary of evidence and previous bibliography concerning the archaeological evidence for Indo-European origins, see Anthony 1991.
- 64 Schmitt 1973, 272–74.
- 65 Meillet 1923. See Thieme (1953) for a discussion of the evidence of metrical poetics in proto-Indo-European. For a review of recent scholarship regarding early forms of metrics, see Watkins 1995, 19–21; Gasparov 1996, esp. chs. 1, 4.
- 66 Nagy 1974, 145.
- 67 Nagy 1974, 145.
- 68 Foley 1981, 263.
- 69 Murray, 1981, 89.
- 70 *Il.* 1, 1–7; Fagles 1990, 77.
- 71 *Od.* 1, 1–2; Fagles 1996, 77.
- 72 Grube 1931, 2. Cf. Murray (1981, 97), who argues for a less dependent and substantially more balanced relationship between poet and Muse.
- 73 Harriot (1969, 50–1) says, “The Greeks expressed the belief that poetry is in some mysterious way ‘given,’ and that gift comes from an external source to the poet and is other than he is.”
- 74 Scholarly opinion seems to have coalesced around the conclusion that both the texts of the *Iliad* and the *Odyssey* are Archaic in date (Dickie 1995, 51). However, as both West (1988) and Morris (1989) have conclusively demonstrated, fragmentary elements of similar poetic constructs are present in the Aegean as early as the 17th century BCE.
- 75 Murray 1981, 92–4.
- 76 Curiously, the necessary rigidity and inflexibility of such weaving-related mnemonic devices runs counter to much

scholarship positing the spontaneity of oral poetry and its recitation. However, it could be argued that the flexibility of composition is still limited and guided by the inflexible meta-structure provided by the meter of the poem, a phenomenon common to Germanic poetry as well. In the context of weaving, such minor variation and individual creativity could allow for developments of design without compromising the geometric composition as a whole (Parry 1930, 77–8; Lord 1960, 13–29; Parry 1971, 269–70; Nagler 1974, 20–1).

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