

In the mid 1980's, the hottest debates in rug circles centered on whether or not Irene Emery's *Primary Structures of Fabrics* formed a practical basis for pile-rug and tribal flatweave descriptions. John Wertime, as the best informed of the "structuralists," led the charge on one side and vigorously promoted specific methods for applying the Emery system to rug analyses. Although Wertime still prefers the Emery methodology, he is to be commended for moderating his approach in recent years. In the 1986 article below, I voiced contrary views tempered by years of practical experience as a fiber artist. I am posting this piece from *Oriental Rug Review*, Vol. V, No.10, pp. 7-9, because the issues have been revived by Anne Rowe.

This piece is not intended for people looking for an introduction to textile terminology. For that, go to [The Basic Tribal Weaves](#).

The Terminology Tangle: Another View

Marla Mallett

As a weaver, and also textile dealer and collector, I have found recent articles on structural terminology annoying. Rigid methodology in the guise of textile language reform continues to be promoted, while protests are ignored. It is apparently tempting to equate scholarship with the use of obscure language. I am aware that attacking entrenched, officious methodology may be futile; I would like, however, to add a few comments to the ongoing discussion, then examine a sample of supposedly "rigorous, precise structural analysis."

Both John Wertime and Jim Ford, in their recent *Oriental Rug Review* articles (Volume V, Numbers 3, 4 and 6), have been adamant in their demands that analytical textile language be purged of all terminology related to weaving techniques or processes. We have been urged to report only what we see in the textile before us -- in terms that are "structural," never "technical." Although authors have been chastised by Wertime for "not coming to grips with the distinction," the distinction seems an artificial one in some instances, an unfortunate one which generates cumbersome, pedantic language in others. In spite of claims to the contrary, even Irene Emery uses so-called "technical" terms and classifications. From my perspective, integration of the two concepts is both justifiable and desirable. One benefit: accurate analyses can be written in more understandable English.

I admire John Wertime's diligence and respect his extensive textile knowledge. I question, however, the wisdom of his rigidity in dealing with language. Instead of addressing legitimate objections (such as those raised by Murray Eiland, *ORR*, June 1983, p. 16), he continues, with each new article, to repeat the



same old arguments. Simple repetition does not make impractical ideas into sensible ones or encourage a dialogue.

The methodology which Wertime calls "The Correct Approach to Fabric Structures" is primarily useful because it permits systematic pigeonholing by individuals with limited textile backgrounds. Having learned the lingo, one can routinely examine a simple fabric and note each major feature without knowing how it was produced or why. Redundancy and the inclusion of irrelevant data can be justified by claims of "precision." The system is convenient too, as one can learn nearly everything necessary by studying one publication: Irene Emery, *The Primary Structures of Fabrics*, Washington, D.C., 1966.



Rug and textile literature often divulges a basic misunderstanding of weaving processes by otherwise astute writers. Since by definition and intent, truly "structural" descriptions reflect little of the creative processes, they offer few clues to assist anyone who wishes to understand how a particular technique may have affected the weaver's designing. In fact, with current structural language, some fabrics are described quite differently from the way in which the weaver would have viewed them. Any weaver deals daily with problems of both structure and technique; so should we in our discussions, forgetting arbitrary distinctions.



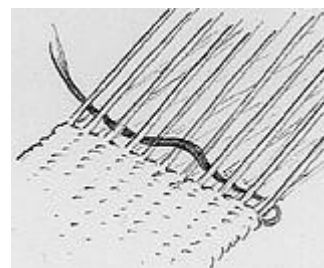
Not only can "rigorous structural descriptions" be misleading, they can be inappropriate when applied to works of art. Wertime's suggestion that textile studies be approached in the same manner as one might study chemistry's periodic tables seems a bit odd. To dissect a work of art or craft, formulize it, describe it in shorthand terms, and categorize every segment seems to trivialize it. Six or eight separately identifiable basic structures can sometimes appear in one flatweave textile; variations may occur within those. Constructions are often combined in an unsystematic manner. Formulization is simply not compatible with versatile and creative displays of technical improvisation. Cataloguing of idiosyncrasies or experimentation can be so distracting that primary structural features are slighted. Only a knowledge of technique is likely to make inconsistencies understandable.

There is an unfortunate tendency for formulization to encourage an emphasis on the craft rather than conceptual aspects of the work. It is no wonder that structural notations are distasteful to many dealers. The approach lends credence to those who relegate powerful textile expressions to the status of "decorative" or "minor" arts. As in any other artistic field, it is the beginning weaver who, of necessity, focuses attention on basic matters of craft; the mature, experienced and creative artist does not. Nor should the connoisseur, serious collector or critic.



I am certainly not advocating ignorance of either structure or technique, although study of the latter seems far more important. Anyone who thoroughly understands a technique will indeed understand the resulting structure, although not necessarily codes, abbreviations or specialized systems devised to describe it. The reverse is untrue.

I am not advocating superficial descriptions when analyses are required, just more reasonable terminology. Current usage tends to be either inaccurate and inappropriate or unwieldy and tedious. Emery's language is sometimes precise. Precision and clarity are, however, not always synonymous. It should not be necessary to repeat a definition or description with every responsible reference, but that is what current structural methodology often requires. If "weft-float patterning with the extra wefts carried in the same shed with the ground wefts where not forming floats of variable length on the front" means "inlaid brocading," why not use those two simple words? It is hardly surprising that popular and sometimes inappropriate terms have prevailed--that in the 19 years since Emery's monumental study was published, it has not been utilized more fully.



Mr. Wertime has insisted that Emery's "system" be utilized "in toto" for textile analysis. I find it makes perfect sense to use her ideas and verbiage selectively. At times Emery provides the best available terminology. At times she is subjective, ambiguous or inconsistent. In some areas, other writers have classified fabrics more clearly--even in "structural" terms. Brocaded textiles, for example, constitute a category of diverse and widely misunderstood basic structures. Yet Emery has provided no way to classify them, merely descriptions of a few types. I can see no reason why her language should be used exclusively, when existing alternatives are just as accurate, more easily understood, more useful and less cumbersome.



Knotted structures exemplify a problem area of widespread current interest. The designations "symmetrical knot" and "asymmetrical knot" are practical terms understood by



everyone. For Wertime to insist instead on Emery's terminology is surely pedantic: his own "movement sequence shorthand" seems a bit absurd. I can see no purpose to be served by "extra-weft cut pile wrapping, Bu1Fo2Bu1." In fact, this terminology is less particular than the simple designation "symmetrical knot," as the "shorthand" notation in no way indicates that both ends of the wrapping yarns emerge *below* the center segment of the knot. A construction quite different from the familiar knot results if a weaver simply follows the "Bu1Fo2Bu1" sequence in the usual and consistent manner of wrapping, finishing with the yarn end on the surface *above* the "Fo2" segment. The result would be impractical to produce and with the ends lying in opposite directions, would create an unruly pile surface. Wertime's "movement sequence shorthand" proves to be similarly inadequate for descriptions of other knots.



Bu1Fo2Bu1:

back under 1,
forward over 2,
back under 1

The "shorthand" is confusing for additional reasons. When the yarn is cut following each knot, or when separate short strands are used, Wertime's sequences are often not those used by the weaver. There are, for example, much faster ways of producing symmetrical knots than "Bu1Fo2Bu1."

On the other hand, anyone wishing to describe an *uncut* knotting sequence needs an additional notation to account for movement of the weft between knots. "BuFo2Bu1" would need to become "Fo2Bu1Fo2Bu1" or "Bu1Fo2Bu1Fo2." This is clarity?? Emery acknowledges difficulties in this area (p. 224) and states: "one cause of abstruse and often contradictory attributions of relations between various 'knotted pile' structures can be found in the practice of construing each so-called 'knot' as a separate unit (as it appears when the structure of a cut-pile rug is analyzed), which forces an arbitrary designation of the points at which a single 'knot' begins and ends." What a dilemma she presents for the "structuralist": an awareness of the process involved is necessary to properly understand and classify the actual existing structure! As for terminology, the words "weft," "cut" and "wrapping," along with a "movement sequence" certainly describe a *process* more than a term like "symmetrical," which clearly refers only to *actual structural appearance*.



Wertime suggests that to properly apply the term "knot," a yarn should pass "through a loop of its own part." Most definitions of the word are, however, much broader. Dozens of "knots" make up the classification normally called "hitches": those in which a cord ties to something else, whether a tree, a ring, or in our case, a warp yarn or two. The foreign element is, in each case, an integral part of the construction. The familiar clove hitch and lark's head knot are part of this group and among those used for rug pile. Why Wertime has singled out the clove hitch (utilized in some Moroccan rugs [in the drawing at the right]) to



designate as a "true knot" is a mystery (*ORR*, June 1983, p. 14). Its yarn does not "pass through a loop of its own part," and indeed the construction would fall apart totally if the supporting warp yarns were removed. Wertime notes that its existence (as a "true knot") evidently escaped Emery's attention. No wonder.

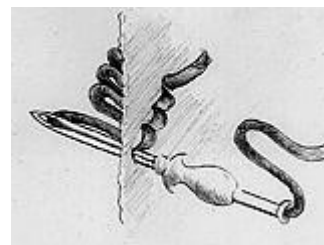
In reality, no rug knot floats in space as do the "wrapping wefts" of Emery's cotton twine models. It should be obvious that the "wrapping" or "tying weft" of any rug knot works in concert with not only the warp yarn or yarns, but with the ground weft directly before it as well. We should note that in most rug knots, at least one end emerges *between* the horizontal part of the knot and the stable ground weft. This is the feature ignored by Wertime's "movement sequences."

Emery's designation of knotting as "extra-weft cut pile wrapping" makes sense in some respects if viewed as a "technical" rather than "structural" classification [and if applied to Scandinavian and American practices, not those of Asia and North Africa]. If, however, we choose to accept her logic, we should not feel compelled to redefine the concept every time we accurately identify a rug knot.

If consistency in the use of abstruse language is a goal, the simple term "knot" is understandably distasteful. It does, however, conveniently distinguish a pile construction produced by tying or wrapping from several other types: those which are inlaid, looped [at the right], tufted, double-woven, embroidered, cut-float or warp pile. Wertime's less particular terms "pile segment" and "symmetrical pile segment" do not. They can describe a velveteen, corduroy or other pile structure as well as a carpet knot. Incidentally, I wonder what a "pile segment" becomes as a rug ages and the "pile" portion of the "segment" wears away? Perhaps the "structuralists" could devise other terminology for describing extremely worn old rugs??



Wertime has muddied the waters still further by referring to "tufts of extra-weft cut pile wrapping" (*ORR*, Vol. III, No. 12, p. 498). The term "tufted" pile normally refers to a totally different sort of structure: one produced when loops of yarn have been either punched or pulled through an existing fabric. Hooked rugs and most modern wall-to-wall carpeting fall into this category. The term "tuft" is also appropriate for describing fibers either inlaid or held in place by weft twining.



The increased probability of errors (either typos or mental slip-ups) with the use of notations such as Wertime's "movement sequence shorthand" is displayed in the *ORR* article, Vol. V. No. 6, p. 252. He inadvertently, I assume, states that "the commonly found symmetrically-shaped pile segment is easily described as

Bu2Fo2Bu2, which means that the wrapping weft goes back-under-2 warps, forward-over-2, and back-under-2." Such a construction does exist, but it surely is not the one he intends to describe.

The Primary Structures of Fabrics is a classic work which includes a wealth of valuable ideas and information. It seems irrational, however, to insist that other writers be constrained and limited by that study. Hundreds of informative books and articles have been written on various aspects of textile construction. Numerous publications have dealt solely with terminology or translation of textile vocabularies. Yet knowledgeable readers, from handweavers to textile engineers, have been told by Wertime that to understand current descriptions they must "master the system"-- that outlined in Emery's book and presumably his own articles. Specialized abbreviations and codes seem particularly foolish when viewed from a broader perspective.

Oriental carpet and flatweave studies are unique in the historic textile field because so many intensely interested "laymen" are involved. The serious literature is directed at great numbers of collectors, dealers and art historians who have no knowledge of specific weaving processes. A practical terminology must meet the needs of both specialist and general reader. Some of Emery's language is satisfactory for this purpose; weavers' terms are better in other instances, while a few popular terms are logical and convenient. To reiterate, "technical" explanations and terminology need integrating with those which are "structural." In choosing appropriate terms, "widespread acceptance" should not be a criteria if continued usage merely perpetuates confusion. Nor should useful terms be discarded because they have been misused in the past. Wertime states that "anyone who does not accept Emery's system in toto should be prepared to provide an alternative one." To do so in a form relevant to Near Eastern and Central Asian textile studies might be useful, but would require an interested publisher.

In 1998 I published a guidebook, *Woven Structures*, outlining standard terminology in more understandable form and with the specificity needed for rug analyses. A second edition has now been published.

The problems generated by insistence on the exclusive use of Emery's terminology are compounded when the question of translation occurs. Jim Ford has demonstrated this difficulty in his recent *ORR* discussions of German/English equivalents for flatweave terminology. Most cultures presumably have developed language to describe textiles in terms of "technique" because it has been practical to do so. I find little justification for pressing a specialized English-language system upon Europeans and Asians -- particularly when that system remains incomprehensible to so many American and British readers 19 years after publication. If communication with researchers from differing language backgrounds is a genuine goal, we might temper our egocentric view by attempting some flexibility in our

thinking and use of language.

Some Practical Examples

A major argument supporting the use of awkward (and difficult to translate) "structural" terminology, is, according to Wertime and Emery, that one cannot know for certain how a fabric was produced by an examination of it. That view may be legitimate in a few cases; in most it is not. Following is a simple problem for the analyst who advocates classifying and describing textiles in precise, objective and strictly "structural" terms:

Suppose that I produce two nearly identical fabric samples, but by utilizing different processes. In this hypothetical case, I weave the first, simultaneously ornamenting it with "discontinuous supplementary weft-float patterning" (in common English: "brocading"). The second I weave, then embroider afterwards with a needle and thread, closely duplicating the first. How could these two pieces be accurately classified and described without any reference to "process"? The same terminology would not be appropriate for both, although the "structures" were essentially the same. One could not speak of "supplementary wefts" in both, as an embroidery element is not a weft. Nor are there "stitches" in both. Indeed, by classifying these two textiles at all, one will have indicated a method of production. This problem is not so theoretical; Middle Eastern brocaded textiles are often mistakenly called embroideries. It is largely from an awareness of the weaving tradition that a knowledgeable viewer immediately assumes brocading was employed.



I presume that a competent analyst would know enough of the two processes--embroidery and simple brocading -- to examine our samples for evidence of their construction method. But wouldn't this violate the "structuralist's" basic philosophy? If the classification is then determined by "technical" evidence, shouldn't that be reported? For example, an area might be discovered in one of our two samples where a needle had pierced a ground cloth thread -- an impossibility if the piece were brocaded. Or the sequence and direction of floats may reveal that the patterning could not have been woven.

In the problem outlined above, if the analyst were not alerted in advance, he could logically assume that our two fabrics were the same; miss-classification and inappropriate language would then result in one case. It seems clear that an involvement with *process* is properly an integral part of accurate textile analysis.

At least, that is, if we use such words as "weave," "weaving," "embroidery," "warp," "weft", "stitch," etc. These all imply a knowledge of process. To be strictly and precisely *structural*, instead of "warp and weft," we would need such terms as "transverse" and "longitudinal elements." Just imagine how much more gloriously and absurdly complex our writing could become by refining that kind of lingo! The question is, of course, where should one draw the line?

Let us carry the argument one step further. Assume there are both justification and legitimate means for distinguishing between and classifying our samples which display nearly identical *embroidered* and *woven* structures. It is equally valid to distinguish between fabrics displaying different *woven* structures, to again search for evidence of equipment and processes. Extensive knowledge is not normally required to separate handwoven fabrics from power loom products. Likewise, one can often determine whether an elaborately patterned fabric has been woven on a loom with complete multiple-harness controls or hand-picked on a simple loom. Surprisingly one can even, on occasion, receive information on loom-warping procedures from examining a textile. We can certainly hypothesize about the order and manner in which the interlacement was accomplished. Wertime does that, to a degree, with his "movement sequences."

The accuracy of this speculation, of course, depends upon the analyst's knowledge and understanding of textile processes. It depends upon the thoroughness with which a fabric is examined. Determining the means of production can obviously be more complex than simply describing a fabric's basic structure. It seems absurd, however, to suggest that because of difficulties, all "technical" language should be banned. Why not utilize and record information relating to process *when* and *if* it is reasonable to do so? A writer can make clear when his or her reporting is based upon assumptions and can note possible alternatives. Individuals without adequate backgrounds can stick to making simple basic structural observations. The relating of available and reliable information seems more important than the production of standardized descriptions.

John Wertime utilizes "technical" information more often than he apparently realizes. For example, he normally states with assurance which elements functioned as warp and which as weft. He has complained (*ORR*, June 1983, p. 13) about Peter Collingwood's use of two quite different names for similar structures (Bedouin saha technique and skip plain weave). Wertime suggests that the two might better be described as "warp-faced plain weave with warp substitution" and "weft-faced plain weave with weft substitution." This is reasonable, but the weaving processes and design limitations are radically



different. It is possible for simple fabrics with these structures to be nearly identical (as in the case of our theoretical embroidered and brocaded samples.) Only by making assumptions about equipment and/or processes used can one determine warp direction and thus differentiate the structures as Wertime advocates. With isolated fragments, it might be impossible. Consistency would demand that the "structuralist" ignore such obvious evidence of method as that provided by selvages. After all, in some parts of the world, fabrics have been routinely produced with four selvages. We might carry the argument to a more absurd extreme: use by the "structuralist" of even the terms "transverse" and "longitudinal" elements is presumptuous, as they imply an appropriate orientation.



Wertime has, I believe, acknowledged "slit tapestry" to be an acceptable term. Asian variations range from sturdy Middle Eastern kilims to delicate silk Chinese K'o-ssu fabrics. The same basic structure appears, however, in Turkish drawnwork embroidery, where it is produced with a threaded needle. I presume Wertime would not call a needle-woven structure "slit tapestry." Again, knowledge of "technique" proves important in the choice of descriptive terms. The point is, simply, that we make compromises continually to achieve clarity in our language.

Currently, most textile analysis, description and classification seems to be for the purpose of facilitating comparisons and attributions. There is, however, widespread interest among textile scholars in design evolution. Motifs and patterns are intimately tied to the idiosyncrasies of each technique. Scholarship in several areas would be assisted if more flexibility were encouraged in analytical writing -- if "technical" material were encouraged. There is now virtually no accurate and relevant material in print which describes and compares the specific techniques utilized by Middle Eastern weavers. Field reports concerned with "weaving techniques" have thus far been limited and elemental; they have dealt almost entirely with warping procedures or the mechanics of loom operation. Specialized weaving processes which relate directly to structural design have rarely been mentioned.

Wertime refers in his most recent *ORR* article (Volume V, Number 6, p. 252) to the "detailed structural analyses" in Cootner, *Flat-Woven Textiles: The Arthur D. Jenkins Collection*, Washington, 1983, as a model of the manner in which Emery's descriptions should be utilized. It seems appropriate to select one of his analyses from that source to examine briefly, since he says that they "should be consulted":



54. ANATOLIAN CICIM (L1978.111)

SIZE: 6'4" x 5'2" (1.93 x 1.57 meters)
WARP: Wool, X2S, rust red; 20 per linear inch.
WEFT: Foundation: Wool 1Z, 2S, rust red: 24 per linear inch.
Supplementary: Wool Z2S, rust red, orange/red, yellow, light blue, green, light green, white, purple, light purple (S?)
STRUCTURE: * Balanced plain weave patterned extensively by (1) weft-float brocading with weft floats of variable length alternating on the two faces (at the end of the pattern unit the wefts wraps the warp 2½ times in many places) (2) extra-weft wrapping with discontinuous wefts (one ground weft after each wrapping weft): horizontal (down-to-the-right 4/2 with the weft carried on the front to the next shed in many places; Fo3u3oBu3); diagonal (4/3 with the horizontal spans on the front); vertical (3/3) (3) 2-color 2-strand countered weft-twining.
SELVEDGE: Structurally identical to ground weave.
ENDS: Balanced plain weave; 2 rows oblique interlacing; vertical plaiting; plaits wrapped with different color wool. "

In addition to the problems of incomprehensibility that this description presents for some readers, it is not as thorough, precise or consistent as Wertime would have us believe. Enough significant information is missing to assure difficulty for anyone wishing to conjure up an accurate notion of the fabric.

1. Although a brocaded textile is described, it is difficult to form a clear idea of the predominant float sequence used. Except for warp/weft size ratios and warp sett, this is the most important structural feature: one critical to any study of the designing. There is no way to determine from a listing of the "wrapping" involved, what the figure/ground relationship might be. I would guess, from having examined similar pieces, that the patterning is based upon a 3/3 sequence, but such an assumption should be unnecessary with "precise" analysis. The notation listing "4/3 diagonal wrapping" is confusing; I cannot help but doubt its accuracy. This feature (rather than 3/2 wrapping along with the 3/3 vertical wrapping) would represent very unusual brocade designing. Speculation is difficult, however, because more general notes are missing.

2. I presume that the various structures here are recounted in decreasing order of importance, much like ingredients on a soup can. Notations as to their use would be helpful, however. Do the horizontal weft wrapping and twining occur as integral parts of the patterning? Or do they serve only as narrow pattern-band outlines and borders, as is traditional with some weaving groups?

3. The description of a distinctive end finish is minimal and inaccurate: What is meant by "2 rows oblique interlacing"?

Does this interlacing (presumably with warp ends) utilize single or multiple warps? What sort of plaiting is used?

4. Isn't it inconsistent to note "2-color" twining, or plaits wrapped "with different color wool" while professing to avoid all references to design? Color is superfluous in this context: it is not a "structural" feature. If there is good reason for such notations, why not be thorough? In fact, color changes in the design are responsible for structural details described here as separate features: diagonal and vertical "weft wrapping."

5. Erroneous as well as extraneous data can be seen in the notation, "at the end of the pattern unit the weft wraps the warp 2½ times in many places." If a pattern yarn is to reverse directions at the end of a unit, the wrapping would, of necessity, be 2 times, not 2½. (If a single rather than double encirclement were used, the normal float position in the return sequence would be blank on the front.) Anyone familiar with brocading techniques will realize this variation is a natural feature, not a detail requiring special identification. We often can see areas in a textile where the weaver has experimented with alternative methods of making pattern-weft turns, for example, trying both vertical and "wrapping" turns. These technical inconsistencies may appear at random throughout a woven piece. In this analysis, wrapping turns are mentioned a second time, although they presumably are identical: "extra weft wrapping with discontinuous wefts, vertical 3/3."

6. Wertime speaks of a horizontal weft-wrapping yarn "carried on the front to the next shed in many places." This makes little sense, as simple 4/2 weft wrapping does not utilize a "shed." Nor does the brocading in this piece. Besides, "shed" is a *purely technical term* used for describing the weaving process. There is no way a "shed" can be a feature of any finished textile.

7. Why, as a strong advocate of "consistency," does Wertime note horizontal wrapping which is "down to the right" and diagonal wrapping "with the horizontal spans on the front," without giving similar information for the vertical wrapping? In my view, the notations are unnecessary in all three cases.

8. How many foundation wefts alternate with the pattern wefts? This varies considerably among brocaded fabrics, but is not noted in any of Wertime's *cicim* analyses in this publication. Although the number of supplementary wefts per inch (either wrapped or floated) is not given, one can at least surmise in this case that a single ground weft occurs in brocaded areas by assuming consistency in the weave. Both "1Z and 2Z" foundation yarns are used 24 per inch in the "balanced plain weave"? How does this occur?

9. Minimal attention is given to the materials and their use. Aside from yarn colors, the only characteristics mentioned are the standard Anatolian Z-spin and S-ply. Is the patterning yarn loosely plied or of a heavy, uniform twist? Is the wool lustrous or dull, long or short fibered? What sort of white cotton is used? These features are more significant in brocading than in any other weaves, and vary widely. No mention of any yarn size is included; thus we cannot begin to determine, from the number of warps and wefts per inch, what the general character of the fabric might be. An easy and practical alternative would be description of the fabric "handle." Is it heavy and stiff, supple and smooth, or granular and rough perhaps? Is it firm or soft? This is one area in which subjective judgments serve a purpose. The many variables present tend to make yarn measurements of limited use.

To summarize, I find the analysis above is lacking in important specifics, while full of excess verbiage. "Precise, rigorous, structural analysis" has produced a description far more complex than the relatively simple textile. I will be explaining my views more fully in an upcoming paper on brocading and will suggest simplified terminology. I will enumerate features which I feel are essential to note in any brocade analysis, as well as those which are extraneous.

We should, by now, thoroughly understand the "structuralist's point of view, if not all of Mr. Wertime's descriptions. My hope is that other approaches to the use of textile terminology can be considered with an open mind.

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Soon after this article was published, I presented a lecture on brocading at the Vienna ICOC, and it appeared in *Oriental Rug Review*, Vol. XII, No. 1 (Oct./Nov. 1991), pp. 16-26. In 1998 I published *Woven Structures*, a manual devoted to the basic weaving techniques and structures used by Near Eastern and Central Asian weavers. The second edition of this guidebook was published in September 2000.

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