An Exploration of Kashmiri 'Naqash' Communities, their Craft Practices and Cultural Heritage

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The Asian Conference on Cultural Studies 2019 Official Conference Proceedings

Abstract

Often learnt and mastered over generations, craftsmen and women still use their traditional knowledge systems, customs and practices in the production of regional handicrafts. The Kashmiri *nagash* is responsible for design development and is an essential bearer of the craft and cultural heritage produced in the Kashmir valley. Kashmir produces distinct floor coverings, one of the largest employment sectors in the region, each adopting indigenous methods of design development, communication and transmission. Hand knotted carpets use a coded syntax in the form of a taleem, the felted namdas use tracing sheets or blocks while the wagoo grass mat uses the method of oral transmission and demonstration. To explore these three craft practices, artisans were visited at different locations in Srinagar. The aim of the study was to examine the linkages between the Kashmiri nagash communities engaged in the production of floor coverings, their indigenous craft practices and the resultant material culture in an attempt to establish them as bearers of cultural heritage that forms the core of artistic practices. Using cultural studies theory, an ethnographic approach was adopted which, involved both direct observation of the production of these traditional crafts as well as semi-structured open-ended interviews with the artisans. The key themes emerging from the analysis have been discussed in light of their significance within the unique socio-cultural setup of Kashmir along with recommendations for future research.

Keywords: Kashmiri craft, cultural practices, material heritage, floor coverings, design practice

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Introduction

Kashmiri artisans have a long tradition of craft practices and heritage that have continuously responded to evolving demands of patrons (Chattopadhyay, 1985; Hendley, 1888), their lifestyles and aesthetics were major aspects which compelled artisanal communities to dive into creating something extraordinary in material, design and artistic innovation that reflected their own cultural practices. The variety of Kashmiri floor coverings produced in the region are some of the many distinct craft practices using indigenous methods of design development, communication and transmission. Categorized as handicrafts, which is one of the largest employment sectors in the state it plays an important role in the economy representing a large and dynamic segment of the manufacturing sector (Gopal, 2016). The location of production, understanding and handling of material, knowledge and mastery of techniques, processes of making and the customs of division of labor based on expertise are cultural attributes of the long-standing manufacturing traditions of Kashmiri floor coverings. Craftsmen and women carry out manufacturing in household workshops located in proximity to each other resulting in craft communities engaged in 'craft based manufacturing' (Seth, 2018). Production is thus a distributed process executed by the collective contribution of various artisanal communities that have practiced and mastered their crafts, usually a family tradition, over generations enabling creation of artifacts for use and adornment of living spaces. The structure of the *Kashmiri* craft industry is pyramidal in nature and comprises of the buyer on top who consumes the crafted products, followed by the trader, who invests in production and the craftsperson's, the producers and bearers of knowledge systems at the bottom. The series of production processes begins with the role of the nagash who is responsible for design development. In the hierarchical structure of the production process he acts as a bridge between the patron and the producer communicating the requirements and specifications of the patron in a comprehendible manner to the producers using tracing sheets for the felted *namdahs*, the method of oral transmission and demonstration for wagoo mats and a coded syntax in the form of a taleem (also written talim, taaleem) for hand-knotted carpets. While analyzing the taleem Harris (2000) extolls the cleverness and ingenuity of 18th century Kashmiri master craftsmen for their innovation through the systematic approach of the *taleem*, and its close correspondence to the structure of shawl fabrics and subsequently carpets, establishing it as an excellent tool for creation of designs as well as reconstruction of antique designs. These traditional knowledge systems, customs, tools, material objects and '...aspects of the total human environment, tangible and intangible...' are craft practices integral to Kashmiri culture forming the core of artistic practices (as cited by Kroeber & Kluckhohn, 1952).

Methodology

This study was conducted in Srinagar to explore the craft practices and cultural heritage prevalent in *naqash* communities responsible for design development of floor coverings in Kashmir. Kashmir is one of three distinctly different natural divisions of Jammu, Kashmir and Ladakh that constitute the Indian State of Jammu and Kashmir (J&K) the northernmost state of India. The fieldwork adopts an ethnographic approach involving direct observations, video recordings where permitted, semi-structured open-ended interviews with the respondents in their natural settings of practice and analysis and interpretation of the coded syntax *taleem*. The respondents

from the *naqash* community that were visited and observed were both manual designers and computer-aided design (CAD) designers, other respondents interviewed and observed were craftsperson's from three different locations in Srinagar each associated and identified with a specific craft practice that produced floor coverings designed by the *naqash*. Rakhi Arth in Bemina was visited for carpet weaving where a skill up gradation training was in progress, Nowhatta for *namdah* production and Mir Behri Dal for *wagoo* weaving. Each craft practice is largely a home based activity that uses distinct methods and tools for designing, transmitting and communicating the designs, a practice followed over generations enabling the production process. Hindi was the language of interaction and communication between the respondents and researcher.

Kashmiri Floor Coverings: An Overview

Kashmiri rugs and carpets are renowned globally for their exquisite beauty, rich coloring, and exceptional quality. The Kashmiri Kaleen (Fig.1) is a hand-knotted pile carpet generally made of silk or wool and patterned using individual knots tied on two warps in an asymmetrical manner with the tufts facing the weaver. Pile weaving in Kashmir uses the Farsi baff, the Persian system known as Sehna, Sinneh or asymmetrical knot for weaving denoted as PK and which opens to the left. It is said to have been introduced in Kashmir in the fifteenth-century by Zain-ul-Abidin, the ruler popularly called Budshah who brought artisans from Persia and Central Asia to train the Kashmiri artisans already adept at spinning and weaving (Saraf, 1990), even though the art of making woolen carpets was known in India as early as the 5th century BC. (Goswami, 2009). Observing the importance of imperial patronage, Hendley (1888) suggests that craftsmanship has simply followed the most liberal patronage – a practice evident when Timur, building his new capital at Samarkand brought craftsmen from Khorasan, Syria and India (Digby, 2007). The earlier commonly held belief that weavers of Turkish origin use the Turkish knot and the Aryan Persians and whole of Eastern Asia use the Persian knot is difficult to confirm as many exceptions to this generalization has been discovered (Ford, 2007). Asymmetrical knots tied on four warps are called the *jufti* knots widely used in Khorasan, eastern Iran, but rarely appears in Indian carpets (Walker 1997). The fineness of carpets is usually indicated by the number of knots woven per square inch in the carpet, called the knot count (kpsi). The knot count is denoted numerically as 20/20 PK¹ or 20X20 in Kashmir, which indicates the number of knots per square inch, the first digit 20 refers to 20 knots in an inch across the width, woven horizontally, the second digit indicates 20 knots in an inch along the length of the carpet, woven vertically (Ford, 2007). Woven on vertical frame looms the *Kaleens* indigenously known as Kal baffi achieved a high level of excellence enabled by a three level production process namely: conception of the design; the execution; and the coordination of the two using indigenous devices (Roy, 2004). An integral component of Kashmiri carpet weaving distinct from Persian practices is the utilization of a coded syntax, which communicates knot by knot, row by row weaving instructions of the visual image for the entire carpet from the designer to the weaver through symbols, who then deciphers it for weaving the carpet. The Taleem-system recognized as a 'sophisticated technology of great historical importance' and considered a 'remarkable Kashmiri innovation' by Harris (2000; 2010) is considered

¹ PK for Persian knots and TK for Turkish knots. In all systems width value is denoted first.

an indigenous style of carpet weaving different from the Persian cartoon style, by Thompson (2003). As opposed to the cartoon style of weaving the design in the *taleem* style of weaving is not visible to the weaver until woven. While the *taleem* comprises of all the useful information in a comprehendible manner however, to know what the design looks like the weaver has to weave the design line by line. This system of communicating the design specifications was first utilized in *Kani* shawls and subsequently adapted to carpet weaving when the shawl weavers transferred their weaving skills and techniques to weaving carpets (Harris 2000; Harris, 2010). The carpet qualities made in both wool or silk yarn vary from 324 knots to 900 knots/sq. inch, however there have been instances of higher knots, in one case exceeding 2000 knots/sq. inch accomplishing such magnificence that they rank among the best on a global scale (Opie and Gates, 1981, Walker, 1997; Ford, 2007).



Figure 1: Traditional Hand Knotted Carpet of Kashmir, Photograph Author, Krimzon Kraftz Srinagar 2018

Kaleen framework: The Kashmiri Kaleen is divided into three sections which forms a framework for design development namely: the border (hashiya), corner (kunjvat) and the field (mattan). Hashiya on kaleens are further identified and classified by their location, width and occasionally by the design elements used. This is illustrated in fig. 2. Kunjvat are the corners of the kaleen formed at the intersection of the series of vertical and horizontal borders. The mattan is the field of the carpet which is framed by the borders. The design categories of Kashmiri kaleens are determined by the design features, composition of elements and semmetry displayed in this area of the kaleen.

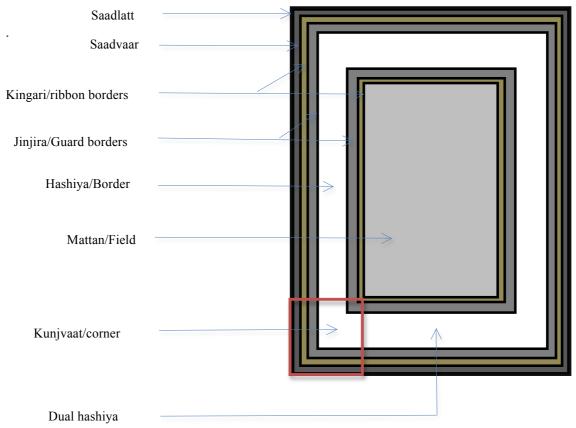


Figure 2: Kaleen Framework

Design Categories: Design features and symmetry of composition determines the categorisation of Kashmiri carpet designs. A Kashmiri kaleen is thus categorised as Dabdar when the design is developed in a boxed pattern. The body of the carpet comprises of boxes placed in a pattern of an all over design, each box is individually framed by a patterned border which encloses a floral or plant motif (Fig. 1). Khaswaun refers a design comprising of an all over composition which is not repeated. The motif is composed of numerous elements to create the full pattern. Dajidar refers to an all over design comprising a composition of repeating motifs for creating the pattern for the field of the carpet. Chand chauthai refers to a design comprising of a central circular motif in the field called chauth (moon) and decorated corners in the field created at the intersection of the horizontal and vertical borders called chauthai (quarters). Mihrab refers to designs comprising of the one way arch pattern.

Kashmiri floor coverings additionally incorporate Wagoo, Namdahs and Gabba that were esteemed for their solace, adaptability and biodegradability. These varieties of rugs were used commonly and were popular in both rural and urban family units. Initially, the room floors were covered by a thin layer of clay blends, which after drying, were secured upon by the patij and wagoo mats (Fig. 3), made of straw and of paeich. Wagoo was used on floors in dwellings and as floor coverings and enclosures for passengers in boats (Pirie & Pirie, 1909; Jaitley, 1990). Utilized in mosques, shrines and houses, their economical esteem ensured that it was affordable by all the households (Kaumudi, 2005). These mats indigenous to Kashmir are woven in Srinagar mostly by women, on portable looms fixed into the earth in open spaces surrounding their homes. The wagoo is woven to form a thick pliable mat by

interlacing paeich (reed mace) in the weft, with patij, made with grass from paddy residue by winding one end around the toe and twisting it to create a rope used as the warp. In a likely manner, the rural artisans expanded their market of wagoo to urban territories. Each Kashmiri family could bear the cost of such mats effectively resulting in a great demand and giving employment to numerous artisans (Lawrence, 1895). The wagoo is usually two meters long and one and a half meters wide; however it can be adjusted according to customer's requirement (Jaitley, 1990). The antiquity of the craft is attributed mainly to the impressions of mat weaving on pottery excavated at Burzahom, and Kanishkapura (Jaitley, 1990; Mani, 2006). Notwithstanding the popularity of wagoo mats, a tradition of rugs called gabba also came into use. A gabba is a kind of floor covering produced from old woolen covers called 'Chaeder'. It is made in an assortment of structures and plans and the three noteworthy kinds of gabbas are either appliqué, embroidered, or made in a combination of applique, embroidery and print. Gabba Sazi (making of gabba) is viewed as an ancient craft of Kashmir (Latif & Khan, 2012). This kind of rug was challenging to make as it required the ability to scaffold and shape the rug out of its constituents.



Figure 3: Weaving of traditional floor matting of Kashmir, Wagoo Photograph Author, Srinagar 2015

Namdahs are further the famous embroidered felt rugs produced in Kashmir considered the most artistic textile crafts of the region (Lawrence, 1895). It is made in a variety of shapes and sizes, the felt base is decorated with chain-stitch embroidery inspired by the natural foliage of Kashmir (Mir &Ain, 2010). These rugs were both beautiful and inexpensive making them popular commodities not only locally but also for export inducing carpet manufacturers to open special branches to manage this trade (Watt, 1903). The namdagurs are identified as the felt makers. The felt base is prepared using a manual wet felting process which results in matting, pressing and fusing fibers together through friction, stimulated and lubricated by moisture using soapy water (Mir &Ain, 2010), the naqash designs the namdah and transfers the design on the felt base with the help of laundry blue and needle punched tracing sheets for white namdahs and clay paste block printing for coloured namdahs, the jaladooj execute the embroidery craft while the daubi washes and finishes the rug.





Figure 4: Namdah (L) and Gabba (R) of Kashmir, Photograph Author, Srinagar 2018

The Design Process

Design development is the first of three levels integral to the production of crafts. In most crafts, the first level namely: the conception of the design is separable from the other two- the execution and the coordination both variously tied in the craft practices of the main artisan, evident in craft practices of namdagurs, jaladooj and wagivgurs for instance. In *kaleens* however, all three levels are in principle separable enabled by the use of ingenious devices such as the taleem and the presence of the ustad/vaasta thus eliminating the requirement to refer to the whole carpet (Roy, 2004). Each of these production processes are carried out by a series of sequential tasks which are distinct and performed by artisanal communities exhibiting a specific expertise. Traditionally the design process has been manually conducted through a hierarchical arrangement of craftspersons to execute the workflow distributed among artisanal communities. This process has been described by Moorcroft over two centuries ago (1841), and more recently by Harris (2000; 2010) in the context of shawl weaving and by Lawrence (1895), Sarraf (1990), and Kaur (2016) in the context of carpet weaving. While the arrangement and actors have altered since Moorcrofts description the functionality and interpretation of the taleem has continued unchanged. The workflow of the design process as described by Moorcroft (1841, vol. 2) can be illustrated as follows:

Naqash/ =>Tarah Guru/ =>Taleem Guru/=>Nakaal/ => Ustad/ => Kalbaaf/ Designer Color caller Taleem writer Copiest mastercraftsman Weaver

In recent years technological intervention has reduced the number of stakeholders manual tasks of color coding and copying now substituted with design softwares and printing and photocopying facilities respectively. The tasks of the *kaleen naqash* thus comprises of designing + color coding+ writing the *taleem*. The workflow of the actors presently engaged in design execution in *kaleens* can be illustrated as follows:

Nagash=>Ustad/Vaasta=>Kalbaaf

In the case of *namdah* production the sequential tasks from designing to transfering of the design on the felted base is executed by the *naqash* before the next actor, the *jaladooj* executes the task of embroidery. The workflow of the actors engaged in design execution in *namdahs* can be illustrated as follows:

Naqash=>jaladooj

The main actor in the production process thus is the *naqash* who executes the first of three levels integral to the production of crafts and is responsible for developing a suitable design in the desired quality within a specific dimensional parameter and communicating all the specifications of design type, alongwith the dimensions of the floor covering to be produced to the craftspersons. The methods and tools used for communication and transmission from *naqash* to crafts persons are distinct and have been practiced for generations.

Kaleen In the production of *kaleens* the *naqash* is the first actor responsible for executing a series of sequential tasks integral to the design development process which begins by determining the quality and size of the carpet. The *Kashmiri kalbaaf* weave carpets in qualities varying from 18x18 kpsi to 30x30 kpsi and higher, the density of knots determines the extent of intricacy and detail that can be achieved in weaving. Acertaining the dimension of the carpet determines the extent of the spacial parameters of the visual imagery.

Design Development: the naqash then creates the design using either a manual setting (traditional) or a digital setting (modern technological intervention). The manual setting requires the design to be drawn on paper manually using a pencil as opposed to the digital setting where the design is created using a a computer aided software. In both cases the design is created on a graph where each square determines a single knot. The quality of the carpet to be woven determines the divisions in an inch. An 18/18 PK will have 18 divisions in an inch horizontally and vertically. Traditionally the graphs were hand drawn, with the printed graph sheets emerging in the 1950's (for evolution of the graph see Kaur, 2017) presently CAD softwares enable the possibility of customising graph grids according to requirement.

Marking the design with colour codes: The completed drawing is then coloured and coded using symbols.

Writing the talim: The complete drawing is then translated into a notational cryptograpgic script whereby each unit/knot comprises of two symbols always written together, one symbol indicating color and the other indicating number of knots (Fig. 5 b) the symbol of three dots denotes the color red whilst the diagonal oval symbol comprising two dots denotes the number twenty the forward slash denotes end of the section (alch). The paper roll used for writing is usually rust or brown in colour and called the kud.

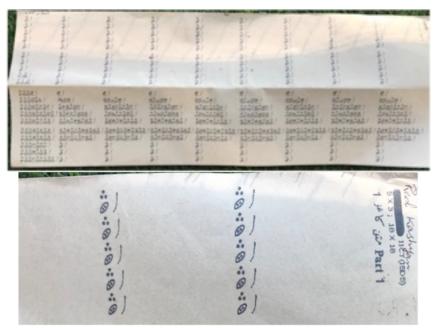


Figure 5: a) above b) below Taleem. Courtesy: Indian Institute of Carpet Technology, Srinagar.

Deciphering the taleem: Each "kud" is always divided into sections of 20 vertical knots and 20 horizontal knots separated from each other by a forward slash symbol '/' called 'alch', creating vertical columns (Fig. 5a). The number of alchs represented on the kud and the resultant number of kud rolls required for communicating the design is determined by the quality and dimension and design symmetry of the kaleen. hand knotted carpet weaving is a process of knotting individual knots on the warp yarns which requires meticulous and precise calculation of number of warps to be set up. The specifications of the design is indicated on the top right hand side of the taleem (Fig. 4b) which displays the name Red Kashyan, also indicated are dimensions of the desired kaleen 5(1)X3(w) feet and quality18X18 kpsi. The dimension and quality specification enabling calculation of the warp yarns required for weaving calculated by multiplying the horizontal knots in an inch in this case 18 by the width of the carpet in this case 36 inches (3 feet).

Kpi X width of carpet= number of warp yarns 18 X 36= 648 warp yarns

To determine the number of *alch* in the *taleem* the warp yarns are divided by twenty the number of knots per *alch*. This calculation would communicate instructions for a *Khaswaun* design.

As the red kashyan design on the *taleem* demonstrates a symmetry operation of longitudinal reflection (for symmetry operations see Hann, 2013) only half the number of *alch* would be needed due to the repeat symmetry of the design. Weaving of *kaleens* is a process executed from bottom to top whilst the instruction on the taleem are read and followed from top to bottom. The *taleem* (Fig.4 b) further indicates the section of the carpet that these instructions apply to based on the *kaleen* framework discussed earlier the section is followed by indicating the sequence of production by indicating the part with the help of a numeral indicator. To further comprehend continuty all the *taleem* sheets in a set are numbered.

Hence the *kaleen naqash* through a series of calculations, symbols and tools is able to cleverly communicate and transmit all the useful information without benefit of a computer measured in the number of yarns available, further, each row adds up to the same total number of *knots*. This is a testament not only to the ingenuity of the system, but also to the experience and skill of its master-craftsmen (Harris, 2000).

Namdah production on the other hand whilst incorporates the expertise of the *naqash* for the design development process, as opposed to *kaleen* production a coded syntax is not used rather the method of communicating and transmiting the designs after first acertaining the dimensions and shape of the *namdah* is a manual process whereby the *naqash* develops the design on a tracing paper first using a pencil and then reinforces it using a pen. The selection of the width of the paper which is available in 20 meter rolls of widths 40, 50 and 60 inches is determined by the dimensions of the *namdah* to be produced. For larger sizes the sheets are joined using transparent masking tape. Details of the entire design is then needle punched which enables transfering the design on a white felted base using fabric blue (Fig 6, left). For dark colored felts the design is transferred with the help of wooden blocks through a manual block printing method using clay paste (Fig 6, right).







Figure 6: Process of design transfer, Photograph Author, Srinagar 2018

Wagoo designs unlike the *kaleen* and *namdahs* do not begin as drawings or artworks. The designs are woven structures designed and produced in two styles namely: single or plain weave called *Walkhur* and double or basket weave called *Seod*. Practiced over generations the *wagivgur* weaves from memory and the craft practice is transferred from mother to daughter through oral transmission combined with demonstration.



Figure 7: Woven wagoo designs, Walkhur (L), Seod (R)
Photograph Author, Srinagar 2018

Conclusion

While the role of all artisanal communities and their craft practices are integral to the production process, the role of the *nagash* is of an essential bearer of the craft and cultural heritage produced in the Kashmir valley. Responsible for the design development of floor coverings, the nagash continues the use of traditional craft practices learnt and mastered over generations. The traditional practices have thus enabled continuity in the deep linkages between Kashmiri artisanal communities, their material culture and the prevailing craft practices in producing indigenous floor coverings using regional design practices and craft-based manufacturing. The craft producers of kaleens and namdas follow and interpret the design concepts developed by the *nagash* using the coded syntax in the form of a *taleem* for *kaleens*, the tracing sheets and blocks for *namdahs* and the method of oral transmission and demonstration in the case of wagoos. Thus, these indigenous craft practices and the resultant material culture form the core of artistic practice in the region. Furthermore, the craft practices of Kashmiri artisanal communities form a strong part of their identity as the traditional methods are practiced from one generation to another and rely on complex interactions facilitating knowledge transfer within the communities.

References

Chattopadhyay, K. (1985). *Handicrafts of India*. Indian Council for Cultural relations.

Digby, S. (2007). Export industries and handicraft production under the Sultans of Kashmir. *The Indian Economic and Social History Review*, 44(4), 407-23. SAGE London.

Ford, P. R. J. (2007). *Oriental Carpet Design: A Guide to Traditional Motifs, Patterns and Symbols.* UK: Thames & Hudson.

Goswami, K. K. (2009). Developments in handmade carpets: an introduction. In: Goswami KK (ed). *Advances in carpet manufacture*. Oxford: Woodhead Publishing. pp 138–181.

Gopal, K. (2016). *COHANDS e-newsletter*, Issue 1 [online] available from http://www.handicrafts.nic.in/pdf/enewsletter.pdf?MID=TEyG5ROYxiYTPr5G+1Sh Pg

Hann, M. (2013). *Symbol, Pattern and Symmetry: the cultural significance of structure.* London, New York: Bloomsbury.

Hendley, T.H. (1888). Alwar and its art treasures. London: W. Griggs.

Harris, P. (2000). Decoding the talim. Hali 110:82–83

Harris, P. (2010). Decoding the talim. Marg Vol. 62, No.1

Jaitley, J. (1990). Straw, Willow and Grasswork. In Jaitley, J. (Ed.) *Crafts of Jammu, Kashmir and Ladakh*. Ahmedabad: Mapin Publishing Pvt. Ltd. pp155-171.

Kaumudi, (2005). Arts and Crafts in Kashmir: It's Cultural Heritage. New Delhi: Gulshan Books: New Delhi.

Kaur, G. D. (2017). Cognitive bearing of techno-advances in Kashmiri carpet designing. AI & Soc.32: 4.pp 509-524. https://doi.org/10.1007/s00146-016-0683-2

Kaur, G. D. (2017). Cognitive dimensions of talim designing: evaluating weaving notation through cognitive dimensions (CDs) framework. Cogn Process18: 145. https://doi.org/10.1007/s10339-016-0788-z

Kroeber, A.L. & Kluckhohn, C. (1952). *Culture: A Critical Review of Concepts and Definitions*. Cambridge, Mass., The Museum. Available [online] https://archive.org/details/culturecriticalr00kroe/page/n7

Latif, S., & Khan, R. Y. (2012). Creation and exploitation of new Textile designs derived from Kashmiri Namda and Gabba Motifs. *Greener Journal of Art and Humanities ISSN*, 2276-7819.

Lawrence, R (1895). *The Valley of Kashmir*. London.[online] available from https://archive.org/details/valleyofkashmir00lawruoft [Accessed 12/07/2018]

Mani, B.R. (2006). Kashmir Neolithic and Early Harappan: A Linkage. *International Seminar on the 'First Farmers in Global Perspective'*. [online] available from: http://archaeology.up.nic.in/doc/kneh brm.pdf. Pp 234.\

Mir & Ain, (2010). Mir, F.A. & Ain, F. (2010). Legal Protection of Geographical Indications in Jammu and Kashmir- A Case Study of Kashmiri Handicrafts. *Journal of Intellectual Propert Rights, 15*, 220-227. [online] available from: http://nopr.niscair.res.in/bitstream/123456789/9068/1/JIPR%2015%283%29%20220-227.pdf

Moorcroft, W. & Trebeck, G. (1841). *Travels in the Himalayan provinces of Hindustan and the Punjab, Ladakh and Kashmir; in Peshawar, Kabul, Kunduz and Bokhara: from 1819 to 1825*, Vol 2. London: John Murray.

Opie, J., & Gates, P. J. (1981). Tribal rugs of southern Persia. J. Opie Oriental Rugs.

Pirie, P. & Pirie, H.R. (1909). *Kashmir; the land of streams and solitudes*, [online] available from- https://archive.org/details/kashmirlandofstr00piririch

Roy, T. (2004). Traditional Industry in the Economy of Colonial India. UK: Cambridge University Press.

Saraf, D. N (1987). *Arts and crafts Jammu and Kashmir: Land people and culture.* New Delhi: Abhinav Publications.

Saraf, D.N. (1990). Carpets. In: Jaitley, J. ed. *Crafts of Jammu, Kashmir and Ladakh*. Ahmedabad: Mapin Publishing pvt. ltd.

Seth, V.K. (2018). *The Story of Indian Manufacturing: Encounters with the Mughal and British Empires (1498-1947).* [EBook] Singapore: Palgrave Macmillan.

Thompson, J. (2003) Looms, carpets and talims. In: Tapper R, Maclachlan K (eds) *Technology tradition and survival: aspects of material culture in the middle east and central Asia*. Frank Cass Publishers, London, pp 136–143

Walker, D. (1997). *Flowers Underfoot Indian Carpets of the Mughal Era*. New York: The Metropolitan Museum of Art. Pp 27.

Watt, G. (1903). *Indian art at Delhi, 1903: being the official catalogue of the Delhi exhibition, 1902-1903*. Calcutta. [online] available from: https://archive.org/details/indianartatdelhi00indi 0/page/530

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