

## *Original Paper*

# Analysis on the Materials Used in Weaving Jewelry Design

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### ***Abstract***

*The present study discusses the use of materials in the weaving jewelry, weaving jewelry is a type of jewelry that has a structure or texture similar to the textiles works. Although the practice of weaving jewelry is evident, there are many styles of weaving jewelry around the world, many researches talk about the designs, methods or structures of the weaving jewelries but few comprehensive overview of the materials involved. This study is a qualitative research method, bibliographical and scientific literature review were carried out as well as consulting collections of artists and designers, currently working with jewelry. This study takes the attempt of weaving materials in jewelry design as the theme, talking about how to make weaving materials unique and beautiful.*

### ***Keywords***

*Weaving Art, Jewelry Design, Natural Fiber, Weaving Material*

## **1. Introduction**

Weaving is a fabric formed by interweaving two or more different sets of threads, the warp and the weft, at right angles. Weaving art is one of the dynamic links between the past and present. Weaving has been an integral part of human culture for centuries. From ancient civilizations to modern societies, different cultures have developed their own unique weaving techniques and styles. In the context of jewelry design, incorporating elements from traditional weaving practices adds a sense of cultural heritage and craftsmanship. Weaving techniques are traditionally worked with rope, hair, bamboo, metal and so on. In the development of the weaving art process, the use of materials is also more diverse, the artificial fiber, glass fiber, ultrafine metal fiber, etc., can be used in the weaving art jewelry design in now days. In the Shang Dynasty, the knot gradually changed from practical function to decorative function (Shi, 2023). Weaving is one of the oldest human crafts, and archaeological research has confirmed that weaving (knotting) was widespread in the Neolithic Age. As one of the oldest crafts, woven goods have the unique sense of texture and beauty and gone into people's lives. With the booming development of

the jewelry industry, weaving as a special art element has also become an important inspiration source for the jewelry designers. The design of weaving as an element appears in a large number of jewelry, in various forms, not limited to knots or beads. Each material has its own unique and irreplaceable advantages, and the design concept conveyed is also unparalleled. Therefore, in the process of weaving jewelry design, the form of the work is not the only element need to be considered about, the understanding of the material is also an important role plays in the design.

The beauty of jewelry products are the highly harmonious crystallization of art, processing craft and materials. With the vigorous development of the living standards and the progress of civilization, a variety of materials are richly reflected in jewelry design (Yang, 2019). Each material has its own characteristics of existence. The expression of woven jewelry is different because of the diversity of woven materials, understanding the specific characteristics of different woven materials is the core of the creation of woven jewelry. With the improvement of weaving technology and the continuous development of materials, the pattern and assembling method have been further expanded. "Weaving" art has shifted from functionality to more "artistic" characteristics (Zhang, 2022). The different forms of materials have different aesthetic values that may play an important role to influence the designer's creativity. Usually, the woven materials have distinct characteristics, rich texture and strong plasticity. How to use woven materials effectively in jewelry design is of great significance for designers to express their design concepts, enhance visual and tactile expression of jewelry.

## 2. Nature Material

Natural materials are readily available, and the first weaving works of humans are made from materials that are available around them, such as grass, bamboo, bark, animal hair, etc. The natural fibers have a high aesthetic appeal in fashion fabrics (Yasith, 2021). With the progress of technology, people did some change on these materials, such as repeated soaking, dyeing, etc., to transform the material into a state that is easier to weave, also put some embellishments on the woven works to make it beautiful. *The Classic of Mountains and Seas · Great Wilderness Jing · Guo Pu Note*: "taken from body nearly and from materials far... To make a knot and a net" illustrates that early humans were adept at weaving materials from nature. Because of the advantages of natural materials such as environmental protection, modern waving jewelry design increasingly likes to use these materials. The natural materials originated in different biomes, these fibers have special characteristics, both regarding their physicochemical composition and their technical possibilities of weaving (Ivete, Edson, Maria, & Julia, 2019).

### 2.1 Bamboo

The characteristic language of bamboo weaving is expressed in line form. The texture beauty of bamboo weaving forms a unique and rich texture pattern through the superposition and interpenetration of bamboo strips of different thickness, thickness and smoothness, and this kind of pattern becomes one of the special symbols of bamboo weaving art (Zhang & Luo, 2022). In the design of bamboo jewelry,

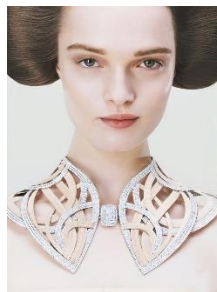
the texture of bamboo mainly includes the natural rhythm of bamboo node texture, smooth and refreshing skin texture, vertical and delicate longitudinal section texture, beautiful and smooth, rough and simple transverse section texture, as well as rich and soft woven texture. The bamboo is common and easy to get in many countries and areas, bamboo is also can be bend easily to make different angles and shapes. There are many outstanding artists are famous by making bamboo jewelry such as Diao Xiaokuan from China, Silvia Furmanovich from Brazil, (Figure 1, Figure 2) etc. The clean and moist color makes the whole bamboo hair pin bright and clear, and highlights the rich changes in the structure of bamboo, so that bamboo jewelry is favored by many luxury brands, such as Boucheron who has a necklace combining bamboo with diamond which is luxurious and unique (Figure 3).



**Figure 1. Earrings (By Diao Xiaokuan, China)**



**Figure 2. Earing (By Silvia Fuimanovich, Brazil)**



**Figure 3. Necklace, Brand Boucheron. 2022**

## 2.2 Hair or Fur

Hair braiding was a very popular practice among Victorian women. Hair was commonly braided by

boiling it in soda water for 15 minutes, finishing it to length and dividing each piece into 20-30 small strands (Gu, 2016). In the mid-19th century, British jewelers used about 50 tons of hair per year to make mourning jewelry, which shows how popular mourning jewelry was at that time, and its commemorative significance is far greater than the decorative significance. Hair woven jewelry is rare in the time after that. In the modern time, some people like to use the hair from their relatives or fur from their pets to make weaving jewelries (Figure 6).



**Figure 4. Hair Weaving Earrings from the Victorian Era (Note 1)**



**Figure 5. Hair Waving Bracelet (Note 2)**



**Figure 6. Horsehair Bracelet, CJ Horse-Element Studio (China)**

### *2.3 Other Natural Fiber*

There are many other materials in nature that can be used for weaving jewelry, such as straw, corn husks, palm leaves and even pine needles. Because most untreated natural materials are prone to corrosion, few physical objects have been left. For example, the “Qinghe Caobian” wheat-straw handcraft from Qingdao, China, which started from the late Ming Dynasty and early Qing Dynasty. Now the materials for the straw knitting products are used from the original single wheat straw to weed,

willow, wood, these ingenious straw products have not faded the fragrance of the field, and put on the luster of fashion (Figure 7). Japanese designer Momoko Fujii uses Rice leaves and straw to make jewelry, the jewelries may turn yellow from bright green after the completion as time goes by, the changes of the color make a bridge between the wearer and the designer (Figure 8). Many Brazil jewelry designers like the use natural fiber to make jewelry, such as Ivete Cattani made a pair of cufflinks (Figure 9) by using one special fiber called golden grass (*Syngonanthus nitens* Bong. Ruhland), which is distinguished from the others by the golden glow specific of the species and only found in a small area of the Cerrado biome.



**Figure 7. Wheat-Straw Brooch, Xinhe Caobian, China Qingdao**



**Figure 8. Rice-Straw Earrings, Momoko Fujii, Japan**



**Figure 9. Ciranda Cufflinks, Ivete Cattani, Brazil**

### **3. Metal Material**

The metal materials are mostly used in gold, silver, copper wire, sterling silver wire for waving jewelry products. It is made of tiny beads or twisted threads or a combination of both, soldered together or welded to the same metal surface (Maria, 2006). Metal weaving not only adds durability to the jewelry but also allows for the creation of intricate patterns and designs. The malleability of metals enables artisans to craft elaborate woven structures, providing a distinct visual appeal to the final piece. Metal

materials are easier to be shaped independently, thus to make the ideal spatial layers and a variety of texture effects. The metal weaving jewelry is usually called “Filigree”, it is also seemed as a metal working process that uses metal wires to make the texture and structure of textiles (Guo, 2023). With the continuous development of the history of human use of metals, people make use of the plasticity and malleability of metals, which are commonly used in smelting and casting in the case of metal technology, combined with the weaving process to create metal woven products (Chen, 2017).

### 3.1 Chinese Metal Weaving

Chinese filigree is a typical traditional complex metalworking technique with a long history and unique artistic charm in China, appeared as early as the Zhou Dynasty. Chinese filigree is also a nonphysical cultural heritage of China. The filigree craft with setting is called “Filigree Inlay”, it is the top of China “The Eight Traditional Palace Handicrafts in Yanjing (Note 3)”. Chinese Filigree Inlay can also be combined with various kinds of gold and silver production processes, such as chiseling, plating, tian-tsui, enameling, etc., making a more high-end aesthetic taste process product and the shapes and patterns of them are mostly traditional patterns with auspicious meanings, the shapes are mostly figurative (Yan & Zhang, 2019) (Figure 10).

For the contemporary jewelry, some designers of metal weaving in China still use traditional manual skills, or carry out innovative designs on this basis. Some designers have developed new methods and forms of metal weaving. Chinese artist Zhang Fan quietly puts the filigree technique in the eight masterpieces of Yanjing into her designs, forming a dazzling and unique context of the jewelries. In accordance with the process method of exquisite court craftwork, and the ancient Chinese tie-dyeing process is used for reference to form a gradual effect of gold and silver in the gilding, so that make the spun gold like a gradual shadow in the ink painting. The works as a whole show the aesthetics of contemporary art (Figure 11). Another Chinese artist Leslye Zhang, she uses innovative methods of connection, structural shapes and flexible visual language to create a completely modern aesthetic of jewelry (Figure 12).



**Figure 10. Golden Crown, Ming Dynasty, Saved in National Museum of China**



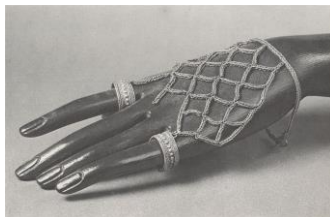
**Figure 11. Golden Crown, Zhang Fan**



**Figure 12. Ring, Leslye Zhang**

### 3.2 Western Country Metal Weaving

There is research showing that the earliest pieces made with it go back to the beginning of the third millennium BC and are in perfect condition after 5000 years (Gregoriotti, 1974). Persian people could use the metal weave a gold glove (Figure 13) in 1000 BC (Billeter, 1971). Western metal weaving jewelry has developed rapidly in modern times, and many of excellent metal weaving artists have emerged. The metal woven jewelry created by Mary Lee Hu have varied shapes and rich colors. The hard metal shows out the soft silk in texture after being woven by Mary's hands (Figure 14). Many of her metal weaving jewelry were showed in her book: *Knitted, Knotted, Twisted, and Twined: The Jewelry of Mary Lee Hu*. Italy has always been famous for the metalworker jewelry, Italian artist Giovanni Corvaja takes the delicacy of gold weaving to the extreme, he tries to build a timeless beauty through his works. His works are the artistic landmark in the study of gold fiber and weaving that combining with beauty, poetry and scientific craft, the gold fiber he used is only 1/5 the size of a human hair (Figure 15).



**Figure 13. Persian Gold Glove, 1000 BC**



**Figure 14. Gold Necklace, Mary Lee Hu**



**Figure 15. 18K Gold Bracelet, Giovanni Corvaja, Saves in Tacoma Art Museum**

#### **4. Yarn and Floss**

The use of rope in knot shape jewelry design is more common, combined with different rope color, make a different meaning of the beautiful knot. Weaving materials are slender and soft, and the most used materials in traditional weaving are yarn and floss, which are easy to weave, easy to cover, close to life, and give people a calm and warm psychological feeling. Many jewelries in China are used yarn or floss to weave which contain the auspiciousness moral, some of them are made by pure yarn weaving, however, most of them are used to decorate gold or silver pieces with general line that have Chinese traditional auspicious ornamentation. Japanese ropemaker Satsukazu Matsuda uses cotton yarns to weave jewelry with lace patterns. Italian artist Clizia weaves bracelets with nylon fibers in romantic colors to create resonant themes by montage technique.



**Figure 16. Pendent, China**





**Figure 17. Cotton Earring, Satsukazu Matsuda, Japan**



**Figure 18. Nylon Bracelet, Clizia, Italy**

## 5. Other Materials

The contemporary jewelry landscape has witnessed the integration of unconventional materials into weaving art. Innovations such as incorporating recycled materials, unconventional metals, or even 3D-printed components push the boundaries of traditional jewelry design. This fusion of weaving techniques with modern materials open up new possibilities for creativity and sustainability in the industry. German designer Elisa Strozyk makes a nice glass weaving works, firstly she puts colored glass stripes in a kiln, and then weaves these glass stripes in different layers, the different colors of glass is overlapped and intertwined, the works are magnificent under the light (Figure 19). Sarah Roseman, a Canadian designer, has developed a new material between textile and glass to weave a fabric that appears to be suspended in mid-air (Figure 20). Mordern Synthesis Company uses microbes to create a firm, lightweight bio-woven material that reduces pollution (Figure 21). There are also many materials used for weaving, such as acrylic, resin, etc., as a Chinese proverb says: everything can be woven. With the development of technologies such as 3D printing, more and more high-quality materials will emerge for weaving.



**Figure 19. Glass Weaving, Elisa Strozyk, German**



**Figure 20. Light silica Weaving, Sarah Roseman, Canada**



**Figure 21. Biomaterial Weaving, Mordern Synthesis Company, England**

Many weaving jewelry products are not made of in only one material. Some designers use various materials and new techniques to show the jewelry of innovativeness.

## **6. Conclusion**

The application of weaving art in jewelry design is a testament to the enduring allure of craftsmanship and abundant materials. Through the exploration of diverse materials, extraction of cultural symbols, and utilization of various weaving techniques, designers can create jewelry artistic that not only showcase technical skill but also carry a deeper narrative. Weaving in jewelry design is a dynamic and evolving field, bridging the gap between tradition and contemporary expression. As designers continue to push the boundaries of creativity, the fusion of weaving art and jewelry design promises to yield evermore captivating and culturally resonant pieces. A variety of materials are richly reflected in jewelry design. However, each material has its own characteristics, and a variety of materials are rich in jewelry design. In short, materials that can be used to weave can be used to make weaving jewelry.

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## Note(s)

Note 1. <http://www.uux.cn/viewnews-79500.html>, access on 30.12.2023.

Note 2. The bracelet made from the hair of the German emperor (Frederick III) and Empress (Victoria, Princess Royal), decorated with a snakelike ring with the FV letter hollowed out inside the ring; Mid-late 19th century; Size: 19.0 x 1.8 x 0.7cm; British royal collection. <http://www.uux.cn/viewnews-79500.html>, access on 30.12.2023.

Note 3. The China national intangible cultural heritage “Yanjing Bajue” (Eight Traditional Palace Handicrafts in Yanjing), represented by the eight craft categories of filigree inlay, tooth carving, jade carving, cloisonne, carved lacquer, gold lacquer inlay, Beijing embroidery and palace carpet.

