Non-traditional symbolism techniques in jewelry design

A A Voitiuk
Irkutsk National Research Technical University, Russia

E-mail alena_vojtuk@mail.ru

Abstract. Based on the collected data on symbolism in the jewelry design at the turn of the 20th century, two types of symbolism have been distinguished: traditional and non-traditional. The research focuses on the traditional and non-traditional symbolism techniques and the technology of audio-file visualization in the jewelry texture design using an enciphered message.

1. Introduction
Jewelry art is one of the most ancient and widely-spread kinds of applied arts. As a result of the industrial progress at the beginning of the 20th century, new technologies enter jewelry production. Due to the new tendencies in the arts and technology development, jewelry production falls into jewelry art and jewelry design.

Being closely connected with the changing historical conditions of everyday life style (for example, with the clothes style peculiarities), jewelry art items were used either as special signs reflecting the social status of the owner or objects having a magical meaning (amulets).

As human aesthetic experience and evaluation of a jewelry article happen by means of sight, the external properties such as materials, shine and composition are of primary importance. However, there are jewelry items having an enciphered meaning (symbolism), their ‘internal content’ being a priority.

Symbolism is visualization of real phenomena, thoughts, feelings and abstract notions with symbols, i.e. with sensual images conditionally taken for what is intended to be expressed by them.

The research allows distinguishing two kinds of jewelry art symbolism, traditional and non-traditional. Traditional symbolism includes status jewelry articles or adornments with jewelry inserts, ornaments or signs the symbolic character of which has been formed in different cultures since the ancient times. These can be wedding rings symbolizing eternity, amulets with semi-precious stones or state regalia designating power.

The formation of non-traditional symbolism in European jewelry art starts at the turn of the 18th century. Non-traditional adornments were especially popular in the Queen Victoria age, when human hair or teeth were used in jewelry items, and acrostic adornments were created.

At the turn of the 20th century, due to the development and integration of computer technologies in jewelry design, as well to the synthesis of different sciences, a flowering of non-traditional jewelry design symbolism is observed.

Jewelry articles with non-traditional symbolism get more and more popular as they contrast favorably with the mass products on the jewelry market. Non-traditional symbolism allows integration of an enciphered meaning in the design object that would be understandable to the owner only, thus attributing an axiological meaning to the adornments.
The research aims at discovering the variety of the techniques used by the contemporary designers when making enciphered-meaning jewelry articles with both traditional and new technologies, as well as development of an audio-file-visualization technology for decorating jewelry items.

2. Research methods
System’s, comparative, formal and structural (semiotic-hermeneutic) analyses have been used.

3. Data collecting and analysis
There are multiple publications on traditional symbolism methods for jewelry articles with enciphered meanings. Actually, all the researchers studying arts and crafts of different historical periods starting with the ancient times have dealt with the question.

The analysis of the data allows us to claim that traditional symbolism methods used in the jewelry design at the turn of the 20th century include:

1. Jewelry items as human status symbols;
2. Symbolism of metals, jewels and organic materials;
3. Symbolism of flora and fauna images;
4. Symbolism of geometrical figures.

As for non-traditional symbolism jewelry articles, there has been little research done.

One of the few researchers studying jewelry art and symbolism, is G.N. Gabriel, the author of over 100 publications in the arts-and-crafts area [1].

In the second part of the 18th century, adornments made with the use of hair come into fashion: hair locks were kept in medallions or rings, human hair also being a shape-forming material for bracelets and chest adornments.

Adornments using human hair or teeth are still popular. For example, Polly van der Glas, an Australian designer creates fashion jewelry (necklaces, rings, earring, brooches) using human teeth and hair.

In the late 19th century, French artists came to the idea of jewelry articles with enciphered messages (acrostic adornments). Acrostic is a message in which the initial letters of the stone names form a word or a phrase.

The idea to make words using the names of precious stones was born at Mellerio dits Meller, a jewelry company. Some of the most famous acrostic jewelry articles were created by Chaumet company by request of Napoleon for Empress Josephine and Empress Mary-Louise, his first and second wives. Later, the English took over the idea [2].

Chaumet are still making jewelry items using this technique. The ABC collection created under Jessica McCormac using computer technologies is a bright example: it is an alphabet using 26 names of precious stones corresponding to the Latin alphabet letters. The initial letters of the stone names and Roman figures are placed between the stones, thus forming a name or a date. Starting from 2005, along with acrostic bracelets, other items such as necklaces, gorgets, brooches and earrings appear [2].

The conventional opinion is that jewelry items should attract human sight with their appearance. However, Metalab, an Australian design studio challenges this opinion. The rings have a non-descript outside appearance, while from the inside, they are decorated with an interesting ornament, so that only the owner of the ring knows the secret and can surprise other people just by taking it off. The external ring’s side is made of gold or silver, the main jewelry work being presented on the internal side. The artists used precious metals and digital processing of the surface when creating this unique collection [2].

Jungyun Yoon, a Korean designer, works in a similar direction. In 2009, she created her Inner message collection. On the inner side of the ring’s shank, there is a 3D writing or a symbol that, being worn, leaves the imprint on the owner’s finger.

Another type of non-traditional symbolism is usage of letters or words. For example, Temnikov Dmitry, a graduate of the Gemmology Department, INRTU uses a Cyrillic letter module as a shape-
forming element to create complex flat and three-dimensional forms. Besides a letter module, he has developed other variants of an individual item design based on a word or phrase [3].

An example of the practical use of a letter module in jewelry is shown in Figure 1.

A very popular recent trend facilitated by 3D jewelry design modeling is jewelry with fingerprints. Some contemporary designers make jewelry with Braille. Luke Jerram has designed a picture-projecting wedding ring. Instead of a jewelry insert, there is a small lens under which there is slot with a photo that can be changed from time to time. When one puts the ring against the light, the beam going through the lens projects the picture on a wall or any other surface.

The synthesis of sciences and IT-systems has generated jewelry combined with different electronic devices: watches, earphones, MP3-players, USB sticks, reminder rings, rings with a payment option, etc. However, the majority of the described objects are rather industrial products than jewelry design articles as they are not made following jewelry technology [4].

![Figure 1. Ring “Alabama”, Temnikov D.](image1)

![Figure 2. Ring “Seven Nation Army” as an example of the practical use of a MIDI file of a musical composition in jewelry design](image2)

The analysis of the research data has revealed that non-traditional symbolism articles in the jewelry design at the turn of the 20th century include:

1) Adornments having a physical connection with the human organism (teeth, hair or fingerprints);
2) Adornments with an enciphered message: acrostic articles and articles using letters or words (including Braille);
3) Adornments with an internal ornament;
4) Adornments with a hidden picture (projecting ring);
5) Adornments with electronic components (reminder ring).

4. Discussion
The aim of the research is development of a new non-traditional jewelry design symbolism method concerning adornments with an enciphered message. Namely it is a texture-creating technology based on audio file visualization in the jewelry texture design, which allows keeping and quality playing the audio record (a music fragment or a voice message) enciphered in the jewelry texture.

The texture can be both a shape-forming basis and an additional means of jewelry decoration. In the course of the experiments, two ways of audio file visualization have been distinguished.

The first one is building the texture in 3D modeling programs using a MIDI file of a musical composition [6].

An example of the practical use of a MIDI file of a musical composition in jewelry is shown in Figure 2.

The technology has the following advantages:
1) It allows selecting any fragment of the composition;
2) It allows collecting textures libraries, which in turn significantly shortens the production time. There are also disadvantages:
   1) There is a high probability of mistake in creating the texture;
   2) It is impossible to use a voice message for creating the texture;
   3) Reverse play is impossible.

With the account of the advantages and disadvantages of the first technology, a new technology has been developed in which an audio file spectrogram is used to create the texture of a jewelry article. When applying the spectrogram on the metal surface and keeping the possibility of its reverse conversion, high accuracy of the picture is necessary. As a result of the experiment series, laser engraving has been chosen as an optimum technique allowing the required texture [7].

The obtained texture can be scanned with a tablet or a smartphone (iOS and Android with pre-load Phonopaper software). The best scanning results are registered for matt or satin metal surface in outdoor light conditions, with no direct sunrays.

5. Conclusion
   Thus, against the background of a big variety of individualization means, a new method has been developed, namely, designing a visualized audio file texture and the file reverse play.

   The developed technology can be implemented with the use of jewelry techniques and jewelry materials, which corresponds to the jewelry design requirements.

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