



Linguistic Corpus Based Analysis of Jewellery Vocabulary in Art Design

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Abstract

The article deals with the conceptual apparatus of jewellery within the field of art design. It focuses on the identification and analysis of jewellery vocabulary. The aim of the research is to identify noun and collocations in jewellery design and to analyse them from a lexico-grammatical point of view. It also aims to provide a corpus linguistic strategy for the identification of vocabulary of the selected topic. The subjects of analyses are authentic texts on art design and the British National Corpus (BNC). The analysis employs a range of linguistic and lexicographic methods, incorporating corpus-based approaches. Graphcoll is a corpus tool employed in the #Lancsbox within BNC. The statistical values of lexical proximity of the words are applied in order to identify vocabulary on jewellery, i.e. Log Dice, MI Score, Delta P1 and P2 tools. The identification of entries in jewellery is primarily derived from specialized dictionaries and monographs. The following entries are identified and analysed: jewellery, earrings, ring, tiara, necklace, pendant, bracelet, brooch, anklet, armlet, bracelet and cufflinks.

Keywords: vocabulary, art design, jewellery, British National Corpus

INTRODUCTION

The research focuses on the mapping of jewellery vocabulary in the domain of art design, as found in professional texts, monographs, museum and gallery yearbooks, written in both Slovak and English. The research focuses on the vocabulary of the semantic field of jewellery for personal adornment in art design. The situation in this area is characterised by its diversity and inconsistency; consequently, there is a necessity to unify it in order to facilitate a more profound comprehension of the conceptual apparatus of art design in the English language. The objective of the research is to compile the vocabulary, to prepare the conceptual apparatus of simple and complex terms related to jewellery in the field of art design and to analyse them from a lexico - grammatical point of view.

1. TERM THEORY

The term is vocabulary element naming a term defined by definition and a place in the system of concepts of a specific scientific field, technology, economy and other activities [1]. A controlled vocabulary is an information tool that contains standardized words and phrases used to refer to ideas, physical characteristics, people, places, events, subject matter, and many other concepts [2]. A term is considered primarily as a part of the vocabulary, words that have a precise and unambiguous meaning in the professional language and that are felt in spoken language as belonging to some professional field.

Some linguists also see the difference between terminology and nomenclature. [3] defines terminology as a collection of specialised terms used in the scientific disciplines. Consequently, in terminology understood in this way, a nomenclature as an individual group of terms naming certain things or concepts classified according to the field system is identified.

Each term has its own meaning, it fulfils its function only in the system of terms of the given discipline. [4] postulate that when discussing art vocabulary for categorizing works of art, we are really talking about the controlled terminology used to index art works.

The relationship between term and concept (between onomatological structure and logical spectrum) is mediated. Not all elements of the logical spectrum are captured in the term [5]. Word meaning is defined by [6] as dynamic, but that does not mean that it cannot be measured. The way to measure it



is to study large bodies of evidence, recording the ways in which words are used and the inferences that can be based on different patterns of usage.

[7] determines the lexical meaning of a word by three basic factors, which are: 1. logical-objective content, which is not only a reflection of objects and properties of objective reality, but also of their contexts in the respective world; 2. the regularities and peculiarities of the grammatical means through which this logical-subjective content is realised and reproduced; 3. the correlation of the word with the whole semantic system of the vocabulary.

2. METHODOLOGY, METHODS AND RESEARCH TOOLS

The presented project uses a variety of traditional theoretical and empirical approaches and scientific methods reflected in lexicographic procedures. The research uses the following methodology:

1. excerption of the terms denoting to jewellery and lexicographic analysis of the terms from the Oxford English Dictionary
2. analysis of the terms in the electronic corpora, i.e. British National Corpus
3. harmonization and lexicographic notation and
4. proposal of jewellery nomenclature in art design denoting to simple and complex terms based on the research

The present research is concerned with the identification of both simple and complex terms. The second category of terms can be identified through collocability value, which is predominantly measured by statistical values in electronic corpora. These statistical values include the MI Score, T Score and Log Dice.

GraphColl is a module in #LancsBox, which identifies collocations and builds collocation networks on the fly displays them in a table and as a collocation graph or network. It can be used, for example, to: Find the collocates of a word or phrase. Find colligations (co-occurrence of grammatical categories). Visualise collocations and colligations. Identify shared collocates of words or phrases. Summarise discourse in terms of its 'aboutness' [8].

The following methods and procedures have been presented, and their implementation will facilitate the identification of needs, phenomena and problems in the lexicographic processing of art design. These include content analysis of specialised texts, analysis of professional texts, lexicographic work, lexicographic records and lexicographic analysis of dictionaries.

In the domain of terminology research, the following methods have been employed: term observation, term excerption, conceptual analysis, and term analysis. Terminological analysis is defined as the analysis of terms in context and of the concepts designated by them within a given subject matter in order to determine their interrelationships [9]. The methods of term recordings are included according to [10].

In addition to the aforementioned methods, there are corpus linguistics methods that are applied. The employment of electronic corpora facilitates the observation of terms within the context of the sentence, alongside the measurement and evaluation of statistical values of words, including occurrence, average rate frequency (ARF), and frequency of collocation. The lexical proximity of words is measured by quantitative statistical methods, with the statistical values of Log Dice, MI Score being used to achieve this.

3. ANALYSIS OF JEWELLERY TERMS

The subject of the analysis are words, i.e. simple terms excerpted from the book [11] Objects of charm and utility denoting pieces of jewellery worn for personal adornment. Subsequently, English equivalents were prepared from the Slovak-English Parallel Corpus 4.0 and checked in large dictionaries, e.g. [12] Veľký slovník anglicko-slovenský, slovensko-anglický. The initial group of terms derived from the sources includes the following: *jewellery*, *jewellery*; *earrings*; *ring*; *tiara*;

necklace; pendum; bracelet; brooch. New terms derived from authentic texts on art design in English have been included, for example *anklet, armlet, bracelet* and *cufflinks*.

In the research, two electronic corpora have been used. The Slovak-English Parallel Corpus 4.0, the current version par-sken-4.0 released in December 2015 contains 556 million tokens (261 million tokens in the Slovak half, 295 million tokens in the English one [13]. The British National Corpus 2014, a 100-million-word corpus, is a large collection of samples of contemporary British English language use, gathered from a range of real-life contexts. The BNC2014 is being gathered by Lancaster University and Cambridge University Press. [14].

The English simple terms on jewellery, which are analysed in the BNC, are as follows, i.e. *jewellery; earrings, ring, tiara, necklace, pendum, bracelet, brooch, anklet, armlet, bracelet* and *cufflinks*. Via the function Log Dice, MI Score collocations of the previous simple terms are detected. The analysis of the corpora is focused on the collocations of a specific type, i.e. premodifier and a head of the noun phrase. The head is represented by the selected simple terms on jewellery.

Log Dice can be used for term-extraction, hence the description of Log Dice as “a lexicographer-friendly association score” [15]. Log Dice takes the harmonic mean (a type of average appropriate for ratios) of two proportions that express the tendency of two words to co-occur relative to the frequency of these words in the corpus [16].

Highlighting rare exclusivity is thus the main practical effect of the mathematical expression of the MI-score [17]. There is a significant difference between MI-score and T-score: while MI-score finds strong collocations with high relative frequency, and thus rather rare to random, T-score finds non-random, regular and steady collocations, but not very distinctive [18]. Selected simple terms have been evaluated in the BNC 2014, in the whole corpus. The GraphColl module, utilised within the #LancsBox framework, is employed to identify collocations within the range of 5L to 1L i.e. five to one word on the left. The sequence of collocates is then ordered according to the highest value of Log Dice.

3.1 JEWELLERY

The orthographic form 'jewellery' is typical of British English, while 'jewelry' is characteristic of American English. The most frequent complex term represented by the premodifier according to Log Dice is '*silver jewellery*', followed by '*gold, handmade, costume, luxury, antique, diamond, precious, fine, delicate and bespoke jewellery*'. It is evident that all adjectives in the complex terms fulfil attributive functions. The initial two places are occupied by the complex terms *silver* and *gold jewellery*. These adjectives serve to denote the types of precious metals utilised in jewellery fabrication. The adjective *antique* describes the period of the Antique culture, recognizable by the typical patterns or colours, etc. *Handmade, costume, luxury, precious, fine, delicate* and *bespoke* represent attributive adjectives expressing quality and the way of producing jewellery.

The complex term fine jewellery is used for any jewellery that is made from precious metals such as gold, silver, or platinum. Fine jewellery typically uses genuine gemstones like diamonds, sapphires, rubies, or emerald. Fine jewellery is durable and made to last. A piece defined by delicate or minimal appearance, elegance, or grace. Unquestionably, delicate or dainty jewellery is among the most widely worn types of jewellery. Bespoke jewellery refers to jewellery that is made especially for a client or customer. In other words, any jewellery you find lining the shelves of a retail store or on a big online marketplace isn't considered as bespoke. Costume or fashion jewellery includes a range of decorative items worn for personal adornment that are manufactured as less expensive. [19]. According to MI Score the sequence of collocates differ. The initial places occupy handmade, costume and antique attributive adjectives.

jewellery	1 485 occurrences	14,52 ARF		
collocate	freq.(collocation)	freq.(corpus)	Log Dice	MI Score
silver	34	5 206	7,4	8,8



gold	53	9 734	7,3	8,6
handmade	7	227	7,1	11,1
costume	10	1 032	7,0	9,4
luxury	18	3 222	7,0	8,6
antique	6	503	6,6	9,7
diamond	10	2 495	6,4	8,1
precious	8	1 836	6,3	8,2
fine	49	19 157	6,3	7,5
delicate	6	1 199	6,2	8,4
bespoke	5	893	6,1	8,6

Table 1. Jewellery and its collocates

3.2 EARRINGS

The terms *hoop*, *stud*, *dangly/dangle* and *bangle earrings* represent complex terms. The attributive adjectives describe the type and form of the earrings. The following complex terms, namely *diamond*, *pearl*, *gold* and *silver* earrings differ from the previous group. Their attributive features express material, the earring is composed of, i.e. precious stones or precious metals.

Dangle earrings are the type of earrings you may see swing from side to side. Generally speaking, dangle earrings hang below the earlobes and sway as a person speaks or moves. Hoop earrings have a circular earring design that resembles a ring and passes through the earlobe. Stud earrings are typical for a minimalist earring style that includes a focal point attached to a post, which goes through the earlobe and connects to a removable back that keeps the earring in place [20]. According to Log Dice, the complex terms expressing the type of the earrings prevail. The sequence of complex terms is similar even by evaluation of MI Score. While gold earrings are mentioned 9,734 times and silver earrings are mentioned 5,206 times, the approximation values of Log Dice and MI score are comparatively low in relation to the remaining complex terms.

earrings	occurrences 379	3,70 ARF		
collocate	freq.(collocation)	freq.(corpus)	Log Dice	MI Score
hoop	18	210	10,0	14,5
stud	8	215	8,8	13,3
dangly/dangle	5	11	8,7	16,9
bangle	5	65	8,5	14,3
diamond	25	2 495	8,2	11,4
pearl	10	771	8,2	11,8
gold	41	9 734	7,1	10,2
silver	19	5 206	6,8	9,9

Table 2. Earrings and the collocates

3.3 RING

A ring is considered a significant piece of jewellery. It is worn to commemorate significant social events, such as engagements and weddings, etc. The design of such rings is intended to symbolise these events. Engagement and wedding rings are considered to be of the utmost importance according to Log Dice. MI Score identifies the subsequent most significant type of ring, characterised



by an exceptionally high value of 13.3, namely the *signet ring*. A signet is a private seal once impressed into wax to authenticate a document, which was often formed into a finger ring with the seal forming the bezel of the ring. [20]. The rest of the complex terms *diamond*, *gold*, *silver* and *metal rings* use attributive adjectives to describe material, the ring is made of.

ring	6 055 occurrences	59,19 ARF		
collocate	freq.(collocation)	freq.(corpus)	Log Dice	MI Score
engagement	192	4 075	9,3	9,6
wedding	185	5 375	9,1	9,2
diamond	84	2 495	8,3	9,2
signet	38	65	7,7	13,3
gold	70	9 734	7,2	6,9
silver	34	5 206	6,6	6,8
metal	29	8 320	6,0	5,9

Table 3. Ring and its collocates

3.4 NECKLACE

The simple term *necklace* can be defined in a number of ways using attributive adjectives. These include *pearl*, *diamond*, *silver*, *coral*, *gold*, *amber* and *crystal*. These terms serve to denote the material from which the necklace is composed. It is notable that no other lexical types of adjectives are recorded in the BNC.

necklace	640 occurrences	6,62 ARF		
collocate	freq.(collocation)	freq.(corpus)	Log Dice	MI Score
pearl	21	771	8,9	12,1
diamond	43	2 495	8,8	11,4
silver	30	5 206	7,4	9,8
coral	7	757	7,4	10,5
gold	44	9 734	7,1	9,5
amber	5	1 228	6,5	9,3
crystal	8	2 911	6,2	8,8

Table 4. Necklace and its collocates

3.5 BRACELET

The simple term *bracelet* is described by the attributive adjectives *silver* and *diamond*. Other metals or precious stones do not occur in the databank.

bracelet	353	3,45 ARF		
collocate	freq.(collocation)	freq.(corpus)	Log Dice	MI Score
silver	28	5 206	7,4	10,6
diamond	8	2 495	6,5	9,9

Table 5. Bracelet and its collocates

3.6 BROOCH

The term *brooch* is described by the following adjectives *Hanne*, *Milton*, *composite* and *diamond*. The *Hanne brooch* represents an eponym and was named after an archeological site West Hanne, Oxfordshire, the United Kingdom.



The Hanney Brooch belongs to a small group of composite Anglo-Saxon brooches from mid-seventh century. New research argues the brooches witness to the important role of a group of women in the consolidation of the Anglo-Saxon kingdoms [21].

The Milton Jewel is one of the finest examples of Anglo-Saxon brooches of the period, with a sophisticated design carried out in a combination of materials. The use of cloisons inlaid with garnet, filigree knot work decoration on gold sheet and shell bossess are typical of this type. The brooch was found in 1832 in a cemetery at Milton, west of Dorchester-on-Thames [22].

brooch	143	1,40 ARF		
collocate	freq.(collocation)	freq.(corpus)	Log Dice	MI Score
Hanney	18	40	11,7	18,3
Milton	6	575	8,1	12,9
composite	10	1 441	7,7	12,3
diamond	9	2 495	6,8	11,3

Table 6. Brooch and its collocates

3.7 TIARA, PENDANT

The simple term tiara collocates in the BNC only with the attributive adjective *diamond*.

tiara	90	0,88 ARF		
collocate	freq.(collocation)	freq.(corpus)	Log Dice	MI Score
diamond	10	2 495	7,0	12,2

Table 7. Tiara and its collocates

The term *pendant* has two collocates, they are expressed by the attributive adjectives *diamond* and *silver*.

pendant	182	1,78 ARF		
collocate	freq.(collocation)	freq.(corpus)	Log Dice	MI Score
diamond	6	2 495	6,2	10,4
silver	12	5 206	6,2	10,3

Table 8. Pendant and its collocates

3.8 ANKLET, ARMLET, CUFFLINKS

The terms *anklet*, *armlet* and *cufflinks* occur without collocates of the selected patterns. The most frequent are *cufflinks*, followed by *anklet* and *armlet*.

cufflinks	76 occurrences	0,74 ARF
anklet	3 occurrences	0,03 ARF
armlet	1 occurrence	0,01 ARF

Table 9. Simple terms without collocates



CONCLUSION

The presented research depicted the simple as well as complex terms in the selected field. Identified and analysed simple terms are *jewellery, earrings, ring, tiara, necklace, pendum, bracelet, brooch, anklet, armlet, bracelet and cufflinks*. Next to these simple terms, complex terms denoting to jewellery of the personal adornment were selected, identified thanks to Graphcoll tool, MI Score, Log Dice in the BNC. The merits of corpus analysis were manifold: precise objective results, quantitative data and values, which can be described and further analysed. Each term has the context of the sentence, it can be analysed in its common environment. Statistical values of MI Score and Log Dice were effective in identifying complex terms represented by the collocates in the corpus. No complex term glossary or vocabulary apparatus on jewellery in art design was found. BNC and its tools enabled to focus the analysis on the most frequent collocates or to identify exclusive ones, depending on the aim of the collocation analysis. Complex terms represented a complete list of the collocates of the selected type, i.e. premodifier of the head in the BNC 2014. The head was represented by the simple term on jewellery. Linguistic analysis, mainly at the lexical and terminological level has been incorporated. When changing the electronic corpus, the data may be different, which could mean further analysis. The next step in the research can be the creation of a bilingual conceptual apparatus on jewellery in the art design of the English and Slovak languages.

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