

**IOSUD – UNIVERSITATEA „DUNĂREA DE JOS” DIN GALAȚI**

**Școala doctorală de Științe socio-umane**



# **TEZĂ DE DOCTORAT**

## **SOUNDS AND MEANINGS**

### **(ABSTRACT)**

**Doctorand,**

**Bosoiu Bianca**

**Conducător științific,**

**Prof. univ. dr. Neagu Mariana**

**Seria U 1: Filologie – Engleză Nr. 21**

**GALAȚI**

**2022**

**IOSUD – UNIVERSITATEA „DUNĂREA DE JOS” DIN GALAȚI**

**Școala doctorală de Științe socio-umane**



# **TEZĂ DE DOCTORAT**

## **SOUNDS AND MEANINGS**

**Doctorand**

**Bosoiu Bianca**

- |                                   |  |
|-----------------------------------|--|
| <b>1. Președinte</b>              | <b>Prof. univ. dr. habil. Nicoleta IFRIM</b><br>Director Școala doctorală de Științe socio-umane,<br>Universitatea „Dunărea de Jos” din Galați |
| <b>2. Conducător de doctorat,</b> | <b>Prof. univ. dr. habil. Mariana NEAGU</b><br>Universitatea „Dunărea de Jos” din Galați   |
| <b>3. Referent oficial</b>        | <b>Prof. univ. dr. Elena BUJA</b><br>Universitatea „Transilvania” din Brașov   |
| <b>4. Referent oficial</b>        | <b>Prof. univ.dr. Daniela DOBOȘ</b><br>Universitatea „Alexandru Ioan Cuza” din Iași  |
| <b>5. Referent oficial</b>        | <b>Prof. univ. dr. habil. Lilians-Violeta NEGREA</b><br>Academia de Studii Economice din București   |

**Seria U 1: Filologie – Engleză Nr. 21**

**GALAȚI**

**2022**

Seriile tezelor de doctorat susținute public în UDJG începând cu 1 octombrie 2013 sunt:

**Domeniul fundamental ȘTIINTE INGINEREȘTI**

- Seria I 1: **Biotehnologii**
- Seria I 2: **Calculatoare și tehnologia informației**
- Seria I 3: **Inginerie electrică**
- Seria I 4: **Inginerie industrială**
- Seria I 5: **Ingineria materialelor**
- Seria I 6: **Inginerie mecanică**
- Seria I 7: **Ingineria produselor alimentare**
- Seria I 8: **Ingineria sistemelor**
- Seria I 9: **Inginerie și management în agricultură și dezvoltare rurală**

**Domeniul fundamental ȘTIINȚE SOCIALE**

- Seria E 1: **Economie**
- Seria E 2: **Management**
- Seria SSEF: **Știința sportului și educației fizice**

**Domeniul fundamental ȘTIINTE UMANISTE ȘI ARTE**

- Seria U 1: **Filologie- Engleză**
- Seria U 2: **Filologie- Română**
- Seria U 3: **Istorie**
- Seria U 4: **Filologie - Franceză**

**Domeniul fundamental MATEMATICĂ ȘI ȘTIINTE ALE NATURII**

- Seria C: **Chimie**

**Domeniul fundamental ȘTIINTE BIOLOGICE ȘI BIOMEDICALE**

- Seria M: **Medicină**

## Contents

Key words: .....	5
Introduction.....	5
Research rationale.....	6
Research questions.....	6
Research methodology and corpus .....	7
Chapter 1: Sound Symbolism: Theoretical and Historical Background .....	9
Chapter 2: Sound Symbolism and Cognitive Semiotic Research .....	12
Chapter 3: Universality and Specificity in Phonology .....	14
Chapter 4: Typological Sound Symbolism in English and Romanian .....	16
1. Sound Symbolism in Onomatopoeic Words in English and Romanian .....	16
2. Universals and typologies in English and Romanian phonesthemes .....	17
Chapter 5: Universal Sound Symbolism in English and Romanian.....	19
1. Sound-meaning Iconicity in Phonemes.....	19
2. Universal Sound Symbolism in Poetry – a Phonaesthetic Analysis .....	19
3. Universal Sound Symbolism in New Lexical Items in English .....	21
6. General Conclusions .....	23
Selected References .....	24

**Key words:** sound symbolism, phonosemantics, phonestheme, onomatopoeia, iconicity, cognitive linguistics, phonaesthesia, phonology, phonetics.

## **Introduction**

This thesis aims at providing empirical evidence for the existence of sound-symbolic manifestations in language, mainly from a cross-linguistic perspective, using English and Romanian as the target languages of research. Sound symbolism or phonosemantics, which still struggles to find its place in the array of linguistic branches, refers to a correspondence between sound and meaning in certain lexical items, which opposes the well-known linguistic tenet of the arbitrary in language. The purpose is, therefore, to find whether and to what degree, this type of non-arbitrary connection is a psychological reality in both languages, by examining different lexical categories.

Considering the fact that in recent decades these non-arbitrary associations between phonetic form and semantic meaning have been gradually recognized as occupying a small but meaningful part of the lexicons all over the world, this thesis analyses, from a cognitive perspective, their extent and productivity in English and Romanian, and also their importance in terms of language learnability for Romanian students of English as a Foreign Language. Sound symbolism, which refers to an iconic relationship between semantic meaning and phonetic form, is rooted in the acoustic and articulatory properties of individual phonemes, and implies a connection between sound and different perceptual qualities (i.e., size, shape, taste, smell, etc.) which are examined in this thesis. Moreover, non-arbitrary associations are also analysed in terms of their pleasant/unpleasant-sounding qualia, using a phonaesthetic approach.

The current research is based on the triadic model of the linguistic sign, provided by the American semiotician Charles Sanders Peirce and on Wilhelm von Humboldt's taxonomy of sound-symbolic phenomena. Peirce, who changed the perspective on the Saussurean arbitrary relationship between signifier and signified, by outlining the importance of interpretation in the meaning-making process, provided an elaborate description of the linguistic sign, seen as iconic, indexical or symbolic and introduced, through the first two categories, the iconic or non-arbitrary dimension in language. Humboldt's classification of non-arbitrary manifestations in language envisaged onomatopoeia, phonesthemes and iconic individual phonemes as the main three types of sound-meaning associations. These three categories are separately analysed in this thesis from a cross-linguistic perspective, using English and Romanian, two remotely

related languages, in order to explore typologies and similarities and to provide empirical proof for universal sound-meaning associations.

This thesis, by offering a contrastive phonetic and phonological analysis of the two languages, places phonemes, seen as meaning-bearing units, at the core of the research and, based on previous sound-symbolic literature, demonstrates that iconicity in individual phonemes is directly connected to the place and manner of articulation.

### **Research rationale**

The central tenet of this research is that, based on previous literature on sound symbolism which demonstrates universal connections between sound and meaning, a contrastive analysis between English and Romanian, in terms of their phonologic and phonosemantic properties, can shed light on similarities and typologies and, most importantly, be used as part of the educational processes which imply teaching/learning EFL.

The main objectives, therefore, imply providing a phonologic and phonosemantic contrastive analysis between English and Romanian and demonstrating the existence of non-arbitrary sound-meaning associations which can be further explored in numerous fields.

The semantic areas of investigation include cross-linguistic comparisons between animal sound onomatopoeic words, movement related phonesthemes and literary texts. Furthermore, this paper also investigates new lexical items in English language in order to demonstrate that sound symbolism, through phonaesthetic devices, triggers the adoption and popularity of new words. These new lexical items are further used in an experiment to measure if and to what extent they can be fruitfully used in EFL classes.

### **Research questions**

Throughout writing this thesis many research questions have surfaced out of the central hypothesis which involved demonstrating the existence of sound-symbolic manifestations in both English and Romanian. The main research questions are meant to comprehensively cover the endeavour of contrasting English and Romanian from a phonosemantic cross-linguistic perspective:

The research for linguistic typologies in the two languages was based on analysing indexical sound-meaning relationships which were present in onomatopoeia and phonesthemes. Therefore, the main questions related to typologies were the following:

- 1. Does onomatopoeia in English and Romanian, considering the typologies of the two phonetic systems, cross-linguistically render sound-size symbolism?**

- 2. Are phonesthemes a psychological reality in both English and Romanian?**
- 3. Do semantically related phonesthemes in English and Romanian use the same consonant clusters?**

In order to provide further evidence on the existence of iconic individual phonemes in English and Romanian and, supposedly, in most spoken languages, the research design envisaged analysing universality in literary texts, by using a phonaesthetic approach. The main research question was followed by other subsidiary questions which have arisen during examination:

- 4. Is sound symbolism a psychological reality in English and Romanian literary texts?**
  - i. Do sound-symbolic phonemes relate to the same perceptual qualities and emotions in the two languages?
  - ii. Do writers manipulate the readers' emotions through phonaesthetic devices?
  - iii. Do sound-symbolic phonemes increase the euphonic quality of literary texts?

The last part of this thesis is dedicated to analysing the implications of the phonaesthetic mechanisms in the English language, examining if new lexical items, due to their increased expressive potential, are favoured in being adopted as part of the lexicon. Furthermore, an experiment using Romanian students of EFL, tried to determine if, based on universal phonaesthetic devices, these words are more easily learned and integrated into their vocabularies:

**5. Are sound-symbolic lexemes more easily adopted in the English language lexicon?**

**6. Can sound symbolism influence language acquisition and facilitate learning English as a Foreign Language?**

### **Research methodology and corpus**

This thesis, which compares from a cross-linguistic perspective English and Romanian phonological systems, mainly uses a contrastive phonosemantic approach, to identify sound-meaning associations.

Therefore, a contrastive phonosemantic analysis was used in order to examine similarities and differences between onomatopoeic words relating to sounds made by animals, using fourteen sound-imitative pairs. The research was based on two online sources, a comprehensive a Wikipedia article about onomatopoeia in languages all over the globe ([https://en.wikipedia.org/wiki/Cross-linguistic\\_onomatopoeias](https://en.wikipedia.org/wiki/Cross-linguistic_onomatopoeias)) and Daniel Abbott's list of onomatopoeic words (<http://www.eleceng.adelaide.edu.au/Personal/dabbott/animal.html>). Although many other sources were investigated, these two seemed the most compendious and

authentic, offering IPA phonetic transcriptions for each onomatopoeic word. The fourteen pairs were considered representative for an entire onomatopoeic category, as they have been chosen according to the criteria of frequency and expressivity. The quantitative data and a qualitative phonosemantic analysis were used in a mixed-method approach, to investigate the use of iconic individual phonemes in sound-size cross-linguistic instantiations.

The mixed-method approach was also used to investigate, from a phonosemantic cross-linguistic perspective, some groups of phonesthemic pairs. The quantitative data for the English language were gathered from previous research belonging to Mubarak (2009, 2013) and Smith (2017), also including some online sources that provided valuable information (<https://davidappleyard.com/phonesthemes-and-sound-symbolism.html>). The lexicographic investigation of the Romanian fl- and zb- phonesthemes was done by manual search using the most comprehensive and accurate source: *Dicționarul Explicativ al Limbii Române* (1998). The fl- phonestheme was analysed in a contrastive analysis, revealing many similarities between the two remotely related languages, while the zb- phonesthemic pairs, specific to Romanian, were more language-related.

The fifth chapter investigates similarities between English and Romanian, in terms of the use of individual iconic phonemes in literature and new lexical items. The mixed method research tool was preferred, as the investigation is based on both quantitative and qualitative data.

The cognitive phonosemantic approach was combined with structuralist methodology in the examination of three poems which are commonly referred to as being extremely euphonic. Therefore, the sound-meaning associations were analysed in the last two stanzas of the poem 'The Raven', written Edgar Allen Poe and published in 1845, the poem 'Plumb' ('Lead'), by George Bacovia (1900) and the refrain stanza of the poem 'Jabberwocky' written by Lewis Carroll (1871).

The literary discourse analysis method was applied to investigate the poems 'The Raven' and 'Plumb', due to its dynamic dimension which matches the overall cognitive approach and can thus measure the phonoemotional extent of the texts.

The case study research tool was chosen to investigate the refrain stanza of 'Jabberwocky' due to the elaborateness of the analysis, examining, from a cognitive semiotic perspective, the three-layered iconicity in the four verses, using Charles Sanders Peirce' model of the linguistic sign.

The mixed-method approach, using quantitative and qualitative findings, was also preferred in analysing whether the new lexical items in the English language lexicon contain sound-meaning mappings which bestow them phonaesthetic qualities and whether they are



more easily adopted because of their euphonic extent. Therefore, twenty-two adjectives which made their entry in June and October 2019 and January 2020 in The Oxford English Dictionary were investigated in terms of the phonaesthetic dimension. The research also centers on two experiments whose purpose was to determine if iconic new words can be more facily assimilated by Romanian students of EFL. These experiments were based on the assumption that the phonaesthetic qualities of the sounds are universal and therefore, easier to be recognized by non-native speakers of English.

## **Chapter 1: Sound Symbolism: Theoretical and Historical Background**

The purpose of this chapter is to provide a theoretical and historical background of sound symbolism, a branch of linguistics which constitutes the central approach of the current thesis. One of the main concerns is to clarify the role and extent of the non-arbitrary (iconic) associations while acknowledging the preeminence of the arbitrary nature of language.

The attempts of trying to define sound symbolism and to give it the right place in the array of linguistic branches have never been consistent and, probably, this is one of the reasons that caused more confusion about it. In order to give sound symbolism a theoretical framework some tried to define it as a phenomenon in which “a sound unit such as a phoneme, syllable, feature, or tone [can] go beyond its linguistic function as a contrastive, non-meaning-bearing unit, to directly express some kind of meaning” (Nuckolls 1999: 228), or as a “direct linkage between sound and meaning” (Hinton et al. 1994: 1).

This chapter tries to provide a theoretical account of sound symbolism throughout time, starting with the first philosophical explanations in Antiquity and ending with current empirical studies. This diachronic perspective, which covers arguments for and against sound symbolism throughout more than two thousand years, attempts to capture how linguistic thought has evolved over the centuries and how twenty-first century scientific progress has added weight to empirical research, using neuroscience and psycholinguistics to provide evidence for sound-symbolic manifestations.

The question regarding the nature of words was first asked more than two thousand years ago in one of Plato’s dialogues, *Cratylus*, in which Socrates and his disciples, Cratylus and Hermogenes, debate on the nature of words and the relation between sound and meaning. Cratylus, through Plato’s writings, becomes the earliest known advocate of sound symbolic phenomena, claiming there is an inherent connection between the sound form and the concept

it denotes, advocating for a natural association between sound and meaning. In the seventeenth century, centuries after Plato's writing, the philosopher John Locke wrote against the idea of sound-meaning mappings in language, establishing an exaggerated conventionalist standpoint, one which excluded any type of sound symbolism. Locke's position had a certain degree of truthfulness as no linguistic sign can be placed outside of any arbitrary feature especially if we are to consider the conventionally inherited systems of languages. Consequently, the 'if-not-all-than-nothing' theory, which found echo in most of the structuralist approaches on the arbitrary nature of language, dominated linguistic research in the twentieth century.

However, in the eighteenth century, linguists Gottfried Leibniz and Wilhelm von Humboldt, referred to a certain degree of iconicity in language, paving the way to the twentieth century linguistic tenets which proclaimed the rule of the arbitrary in language but admitted, although to a certain limited extent, certain types of motivated signs. The German philosopher Wilhelm von Humboldt (1836), who was the first to thoroughly analyse the phenomenon of sound symbolism, identified three types of sound and meaning relationship in language: *onomatopoeia*, *clustering* and *iconicity*, which are further explored in the current thesis as a classification of cross-linguistic typological and universal sound-symbolic phenomena.

Nonetheless, the writings on sound symbolism in the nineteenth and early twentieth centuries although innovative and inquisitive, were eclipsed by the dogma of the arbitrary in language introduced by the Swiss linguist Ferdinand de Saussure and every opposing opinion to the Saussurrean tenet was seen, ever since the second decade of the twentieth century, as a threat to his linguistic inheritance. Although the majority of linguists avoided directly contradicting Saussure's thesis, the Danish linguist Otto Jespersen criticised his view on the arbitrary nature of language and especially for minimising the role of iconicity. In the first half of the twentieth century, Jespersen saw sound-symbolism as the force which was to explain the birth of language and he also stated that sound symbolism is an active and productive phenomenon that shapes and enriches languages. Jespersen (1922) also wrote about the *fl-* and *gl-* initial sound pairings at the beginning of certain words which carried some common meaning (i.e., *fl-* consonant cluster refers mainly to movement while *gl-* refers to light). John Rupert Firth referred to them as *phonesthemes*, a category of word initial clusters which is cross-linguistically analysed in the fourth chapter.

A plethora of behavioural experiments took place between the 1920s and the 1950s to investigate the arbitrary in language. One of the first experiments on iconicity was carried out by the German linguist Edward Sapir (1929) who presented English speaking subjects with fictive word pairs that presented a phonetic contrast, e.g., *mil* and *mal*, assigning them opposite

meanings, e.g., ‘small table’ and ‘big table’. According to eighty percent of the subjects the high front vowel /i/ was associated with ‘smallness’ and the low back vowel /a/ was related to ‘largeness’. Stanley Newman (1933), one of Sapir’s student, trying to expand on his mentor’s research and provide further proof for sound-meaning pairings, showed that vowel phonemes can be placed on a scale from ‘small’ to ‘large’. Newman concluded that this was to be explained by acoustic, articulatory and biological factors.

In the twenty-first century, Ramachandran and Hubbard (2001) used the nonce words *bouba* and *kiki* in an experiment which has shown that ninety-five percent of the participants matched *bouba* with ‘roundness’ and *kiki* with ‘pointedness’. These experiments identified two types of sound- symbolic manifestations: *sound-size* and *sound-shape symbolism*.

Johansson and Zlatev analysed in 2013 the phonosemantics of spatial deixis and found that iconicity is explained by articulatory and acoustic phenomena. They also emphasized the importance of the physical processes of the speech organs accounting for a clear articulatory iconicity in closed and open vowels grounded on the degree of the aperture in the oral cavity.

In an article published in 2017, Knoeferle and his collaborators investigated more profoundly into the issue of size and shape symbolism, demonstrating that, alongside articulatory and biological dimensions, the formants, acoustic features of vowels, also trigger their symbolic value. The acoustic dimension was first mentioned by John Ohala, famous for his ‘frequency code theory’, in which he demonstrated that facial movements and vocalic sounds seem to reflect certain meanings. In Ohala’s opinion a high F0 renders smallness and submission while a low F0 implies ‘largeness’, ‘authority’ and ‘aggressiveness’.

Many recent studies have tried to suggest that sound symbolism can influence vocabulary acquisition and can even offer answers connected to the evolution of language. In one of these studies, Monaghan and his collaborators (2014) have shown, by analysing a large corpus of the English language, that the associations between sound and meaning are extremely systematic and that systematicity is a key factor in language acquisition.

In addition, sound symbolism was often linked to language origin theories and Damian Blasi’s study on iconicity across the languages of the world in 2016 revealed that the /n/ sound is present in most of today’s vocabularies for the word *nose*, showing a preserved articulatory iconicity if we are to consider the connection between the /n/ sound and its phonological production which involves using the nose. It seems, therefore, that sound symbolism is resilient to phonetic changes and phonosemantic words preserve the original symbolism of the primordial language.

As it has already been emphasised, sound-symbolism must not be perceived as an opponent to the arbitrary nature of language, but rather as the cohabitant of the same territory, the language, which cannot be solely based on arbitrariness or non-arbitrariness. Iconicity, although a very subtle predisposition in lexicons (except for the languages which have sound-symbolic word classes), can furnish valuable information regarding the origin of language or about the liaison between language and mind. Furthermore, sound symbolism is intensely used in a plethora of socio-economic enterprises (e.g., advertising, literature, public discourse etc.) and it can also change perspective about the way we can and we should acquire new languages.

## **Chapter 2: Sound Symbolism and Cognitive Semiotic Research**

This chapter continues the investigation on non-arbitrary sound-symbolic phenomena and is centred on the modern cognitive semiotic theories which have developed in the last decades of the twentieth century. The overall purpose is to introduce the present sound-symbolic context based on earlier developments, offering thus the framework for cognitive semiotic analyses in the methodological part. Therefore, central to this chapter are the findings of Charles Sanders Peirce, who provided the most comprehensive approach of the linguistic sign and whose theories are used to differentiate between several types of sound-meaning relationships. Most of the classifications for sound symbolism, the most important of which are discussed in this chapter, are rooted in Peirce's perspective on iconicity and in Humboldt's taxonomy.

Structuralist semantics treated the relation between concept and acoustic image in terms of its truthfulness to the real world and, most of the times, disregarded how mind processes interfered in decoding signification. The study of language was, thus, separated from mind operations and words and meanings were placed in a symbolic language system, isolated from any cognitive interference, which created language laboratories where words were analysed only in relation to other words belonging to the same language system. For a very long time in the history of linguistics, meaning was lexical.

From a diachronic perspective, the first to investigate the relationship between sound form and meaning, was the Swiss linguist Ferdinand de Saussure. Saussure's linguistic sign is constituted by a sound pattern or a *signifier* and a concept or a *signified*, which are interdependent and mutually responsible for the meaning of the words. Saussure's main tenet is that the sound pattern and the concept do not have a natural connection that motivates their association, proclaiming thus the arbitrariness of the linguistic sign. The arbitrary sign imposed

by the Swiss linguist raised numerous questions, especially in present day phonosemantic research, which criticises the lack of a material referent (Saussure's signifier was a mental construct) and the failure in hierarchizing the signified over the signifier (sense before sound). Sense is, for Saussure, an attribute of the relation between signs, as nothing can make sense unless related to other signs. Therefore, meaning is oppositional and everything acquires meaning only by contrast with other meaningful elements of the same system.

The arbitrariness of the relationship between signifier and signified was extensively emphasised becoming a "design feature" of language (Hockett 1958) and any intrinsic association between the two is impossible if one considers the immense number of words and their diversity in languages across the globe.

Linguistic research flourished in the twentieth century and many new branches made room in the eclectic world of language research. The interest in languages across the world has led to an increased demand in different approaches connected to the nature of word meaning. Saussure's influential tenets, however, posited sound symbolism in an undeserved and unfruitful obscurity.

The American philosopher Charles Sanders Peirce, contemporary with Saussure and therefore historically placed in the context of the denial of the non-arbitrary in language, also analysed the nature of the relationship between form and meaning, proposing his own linguistic sign model. Peirce's model consisted of three components: an *object* of representation, or a referent, a *representamen* or the form of representation, be it material or abstract, and an *interpretant* which refers to the meaning of the sign. Peirce offered a more subtle and accurate interpretation of the relationship between form and meaning, deriving the nuances from the nature of the linguistic ground - the way the representamen refers to the signifying object. The model proposed by the American philosopher also involves decoding the linguistic sign by using personal experience.

Peirce further managed to offer a typology of linguistic signs, consisting of three types of form-meaning association. The first refers to *iconic* signs in which *the representamen* and *the object*, or *the signifier* and *the signified*, share a similar ground, resembling one another by sharing some common qualities (onomatopoeia, metaphor, etc.). The second linguistic sign is the *indexical* one, where the relationship between *signifier* and *signified* is based on contiguity rather than resemblance, referring to a direct connection between the two, although the ground is not similar. The third sign is the *symbolic* one in which there is no resemblance between *representamen* and *object* and the relationship between form and content is arbitrary, based on conventional rules that are simply passed from one generation to another by means of social

practice (e.g., letters, numbers, etc.). In Peirce's taxonomy we notice a scale of arbitrariness in language in which icons are the most non-arbitrary signs and symbols the most arbitrary. Indexes are placed in between rendering different degrees of arbitrariness.

Of interest to the current study is Peirce's further division of the iconic signs into *pure icons* and *hypoicons*, using hypoicons to establish three relationships between *representamen* and *object*: *images*, *diagrams*, and *metaphors*. *Images* are hypoiconic signs that are based on a relationship of similarity with their object and this resemblance is mainly based on sharing common properties. *Diagrams* stand for analogous relations between the properties of the object and the properties of the sign itself which makes them more abstract than the former category. Therefore, *images* and *diagrams* manifest different degrees of abstraction that are set on a scale from imitation to similarity. Metaphors are interpreted by convention; the interpreter can decode their meaning due to tradition and social inheritance.

This chapter is a retrospect into the long-debated status of the linguistic sign and an attempt to introspect semiotic iconicity in terms of the linguistic sign model offered by Charles Sanders Peirce and developed by cognitive semioticians. Considering that sound symbolic phenomena have prevailed the traditional arbitrary versus non-arbitrary debate, the purpose of this research is to posit arguments in favour of iconicity that belong to previous sound symbolic or linguistic studies or that can be inferred from these and applied in empirical research.

### **Chapter 3: Universality and Specificity in Phonology**

This chapter contains a contrastive analysis of English and Romanian languages from a phonosemantic perspective, aiming to find similarities and typologies in their phonetic and phonological systems. In order to compare the two phonetic systems, we need to be aware of the larger picture of universality. Thus, a general framework to universality and typology is presented in the first part as the chapter starts with a review of the most important contributions to the theory of universals in language, mainly focusing on the generative and cognitive approaches, which have dominated linguistic research in the second half of the twentieth century.

The second part of this chapter analyses universality and typology in terms of the phonetic and phonological system, outlining the importance of acoustic and articulatory factors in the relationship between sound production and meaning. It also contains a contrastive analysis between English and Romanian phonetic and phonological systems, from a sound-

symbolic perspective, stating that similarities and differences between the two languages are rooted in the qualities of individual sounds.

The search for universality and typology in phonetics and phonology is founded on finding vocalic and consonantal symmetries, specific voicing patterns, analysing and comparing segments and suprasegments but, at the centre of the entire quest is the investigation of sound itself (phoneme), the minimal unit of distinctive meaning which linguists of the twentieth century had difficulties in defining.

The sound-symbolic value of phonemes, according to most theories, lies in their articulatory and acoustic features which lead to distinct phonological characteristics. Therefore, the study of universality and typology in phonemes includes both phonetic and phonological research.

The number of vowels displays a great degree of variation across the spoken languages all over the globe. English has between thirteen and fifteen vowels, depending on the dialect, which represents a large vowel inventory while Romanian, also considered as having a large vowel inventory, accounts for seven monophthongs and two diphthongs. One of the most interesting observations in terms of sound-symbolism, is that all spoken languages have a high front unrounded vowel, a low vowel, and a high back rounded or unrounded vowel in their phoneme inventory which proves that articulatory features as high vs. low, back vs. front and rounded vs. unrounded are present in all spoken languages. These contrastive features are at the core of sound-symbolic theories.

The consonantal systems display, as well, a wide range of variety and many universal rules, due to their large number of features and classifications. According to their manner of articulation, consonant sounds can be classified as *nasal*, *stop*, *continuant*, *vibrant* and *lateral*, or as *labial*, *alveolar*, *palatal*, *velar* and *glottal* according to the place of articulation. These groups are further divided into *voiced* and *voiceless* consonantal sounds, which is one of the most important universal features for this group of phonemes, especially in terms of their sound-symbolic potential.

Although English and Romanian share a common language family ancestor, the Indo-European, their close phylogenetic roots are different, as they belong to Germanic and Romance genera, respectively. Synchronically, both languages possess medium sized sound inventories with very few rare phonemes, whose main function is to add to the peculiarities of each of the two linguistic systems. Romanian has thirty-two phonemes while English, which has many global dialects, is said to have approximately forty-five.

The two phonological systems have undergone massive changes over time, as changes in phonology occur more rapidly than in any other field (i.e., syntax) but this investigation is only occasionally diachronic, its main purpose being to emphasise phonetic and phonological similarities and differences between English and Romanian phonemes, which are to be analysed according to their phonosemantic importance. Thus, as sound-meaning mappings are often related in the sound symbolic literature to the articulatory characteristics of the vocal organs, the production of sounds involves the physical participation of certain muscles which start from the chest and reach, before air expulsion, the oral and nasal cavities.

At the phonetic and phonological levels, the two contrasted languages seem to have similar correspondents for almost all the sound segments, but one-to-one cross-phonetic correspondence between phonemes is very rare. However, slight phonetic differences are not a hindrance in sound-symbolic studies which consider universal cardinal sounds as the source of analysis and language-related phonetic features as typologies which are worth being investigated.

The central tenet of the present paper is that language and, therefore, sound production are not isolated phenomena and they can only be investigated from the perspective of their immediate relationship with the physical (articulatory and acoustic) and mental (cognitive processes) environments.

## **Chapter 4: Typological Sound Symbolism in English and Romanian**

### **1. Sound Symbolism in Onomatopoeic Words in English and Romanian**

Onomatopoeia is significant for sound-symbolic theories which associate phonetic form with semantic meaning from a non-arbitrary perspective as linguists define it as the process of creating words that phonetically mimic or resemble the acoustic form of the natural sound. This phonologically human-specific mimicry of natural sounds is based on using phonemes, i.e., consonants and vowels, and is present in most of the languages of the world. However, the means of rendering the natural sounds are language-specific as every language has its own phonological system and this is why onomatopoeia is, in numerous examples, phonemically different across languages.

Onomatopoeia is frequently considered the least important type of sound symbolism, because mimicry was seen as a conventionalized system of signification and not as a natural, non-arbitrary connection between sound and meaning. The contrastive analysis between



English and Romanian onomatopoeic words argues that, regardless of their diverse phonological forms across languages and their peremptory arbitrary imitation, there is, at phoneme level, an undeniable cross-linguistic iconicity which is triggered by the acoustic of the natural sounds.

Following the quest for non-arbitrary phenomena in language, this research is meant to identify phoneme-level similarities between animal sound onomatopoeia in English and Romanian, from a sound-symbolic perspective. The working hypothesis is that both languages use highly iconic phonemes to render the sounds made by animals and, furthermore, that these sounds render, on a universal scale, images of size and shape.

Fourteen sound-imitative pairs have been chosen to analyse similarities and differences between English and Romanian onomatopoeia related to animal sounds, from a sound-symbolic standpoint. The majority of these refer to sounds made by domestic animals due to their common presence in the speakers' direct physical environment, and the main criterion concerns sound-size phonosemantic evidence.

The research demonstrated that onomatopoeic words are not marginal phenomena, as they offer valuable synchronic and diachronic information regarding the phonetic and phonological systems. Moreover, the cross-linguistic analysis between animal sound onomatopoeia in English and Romanian evidences that, although the two languages have different phonetic and phonological manifestations, the size-sound symbolism is present in the contrast between high and low vowels and in the use of consonants which, in both languages, have similar places of articulation.

These findings also show that, provided an etymological analysis, onomatopoeic words might provide valuable information about language origin theories (i.e., the *bow wow* theory). Onomatopoeia is, thus, an auditory iconic sign which is possible in all human languages, regardless of their phoneme inventory, which, though, is limited by the anatomical structure of the vocal apparatus.

## **2. Universals and typologies in English and Romanian phonesthemes**

Similar to onomatopoeia, phonesthemes are, in general, language specific sound-symbolic structures. Recent research evidences their frequency, not only in the English vocabulary but in most of the languages of the world. Clustering, unlike pure iconism (phonosemantic individual phonemes), is more language related and more common in closely related languages. Although phonesthemes are not universal, as iconicity in individual phonemes, being more language-

related, this paper tries to demonstrate that phonesthemes are a lexical and semantic reality in the Romanian lexicon and that the typologies of the phonesthemic words in English and Romanian are triggered by the acoustic and articulatory processes.

The cross-language comparison between phonesthemes in English and Romanian focuses on similarities in semantic meaning and phonological form by investigating the *fl*-cluster in the two languages and further exploring the *zb*-cluster in Romanian. The word initial cluster *fl*- is one of the most frequent consonantal strings in English, having one hundred thirty-two morphemes of which forty-three are considered as phonesthemic. The phonosemantic analysis of Romanian *fl*- word initial monomorphemes evidenced that out of the seventy-five morphemes starting with the *fl*- string, forty-nine morphemes have a phonesthemic behaviour, which signifies that 65.3% of the words starting with *fl*- in the Romanian lexicon contain initial phonesthemes.

The Romanian *zb*- cluster has no phonesthemic counterpart in English and, unlike the *fl*- phonestheme, which mostly relates to cognates, via Latin or French, the *zb*- phonestheme contains twenty-four root monomorphemes which are, in an overwhelming percentage, of unknown etymological origin. The statistical analysis demonstrated that 88.9% of the morphemes which begin with the *zb*- cluster are sound-symbolic, which, in terms of frequency, is higher than chance. The high iconicity attached to the *zb*- phonestheme can be related to the phonetic and articulatory characteristics of the two consonants in the string.

The different phonesthemic manifestations in *fl*- and *zb*- initial clusters indicate different acoustic perspectives about air movement and outline interesting language related peculiarities for the two languages. The current analysis of phonesthemic pairs in the two languages has demonstrated that there are both similarities (*fl*- phonestheme) and linguistic typologies (*fl*- vs. *zb*- phonesthemes) which are worth studying. The phonesthemic clusters are rooted in onomatopoeic words in both languages, and their meaning is mostly indexical.

The existence and the diachronic endurance of phonesthemes are the result of human's cognitive processes which constantly reanalyse the sound-symbolic consonant clusters through their semantic features and transfer this phono-semantic association in real speech usage, adding more similar phonesthemes to the lexicon. This process begins in the mental lexicon, based on prior information, and by means of unconscious sound-symbolic stimuli impacts the real lexicon with new phonosemantic additions.

## **Chapter 5: Universal Sound Symbolism in English and Romanian**

### **1. Sound-meaning Iconicity in Phonemes**

In different historical periods and under the influence of different linguistic schools, semanticists and semiologists have explored sound-meaning mappings, spellbound by this unfairly uncharted territory. The current research covers this highly debated domain that combines mind faculties with speech production, albeit aware of the limitations that modern science has in giving unhesitating answers regarding the realm of language as emotion.

Many sound-symbolic studies have emphasised that speech sounds can also entail feelings of happiness and sadness, serenity or anxiety and many other affective states and there is considerable evidence for psycholinguistic phenomena which lead to associations between phonological features and senses (e.g., texture, brightness, colour, weight) or emotions. Therefore, it is common sense to recognise that there are some words which possess a pleasant-sounding quality while others are acoustically disturbing. This euphonic property of sounds is called *phonaesthesia* and, as this chapter intends to demonstrate, it has been intensively used in different types of discourses to manipulate emotions. Thus, lexical items can carry an immense expressive potential, which equips them with inherent affective properties, this being the rationale guiding this investigation.

Although it is generally agreed in traditional linguistics that phonemes do not carry innate meaning, they have been largely analysed in sound symbolic literature and, consequently, numerous experiments over the twentieth and twenty first centuries have evidenced that phonemes are not only distinctive elements of meaning but that they can also infer semantic properties (Sapir 1929, Kholer 1929, Ramachandran and Hubbard 2001, etc.) based on the physical processes that happen in the vocal tract when uttering sounds.

### **2. Universal Sound Symbolism in Poetry – a Phonaesthetic Analysis**

This subchapter investigates sound-symbolic phenomena in literary texts, using a cognitive approach to sound symbolism in literature, one of the fields that has extensively used phonosemantic devices to enhance the euphony of sounds. Many researchers (Jakobson 1980; Fonagy 1961; Whissell 1999; Tsur 1993) have evidenced that the association between sounds and perceptual qualities has been consciously utilised by poets to intensify the reader's imagery and emotions.

It is generally acknowledged that the language of literature is the best place to observe phonaesthetic manifestations by virtue of its embellished style and suited language conscientiousness. Fitting the sound to the meaning was a constant pursuit for many writers as they considered that, alongside stylistic devices, the sonority and musicality of the words would create a more intimate and emotional relationship with their readers.

Phonaesthesia is an extension of sound symbolism which, in addition to searching for meaningful associations between phonetic and semantic forms, also measures the emotional impact of these associations, by studying the degree of pleasantness of the sounds of certain words. Therefore, phonaesthetic sound-meaning mappings relate to the aesthetic quality of the sound, its emotional and cognitive implications.

The purpose of this study is to provide further evidence on the psychological existence of sound symbolism and to investigate if non-arbitrary phoneme-level phenomena are present in English and Romanian, in a cross-linguistic analysis. The preeminent hypothesis of the present research is, therefore, that in both English and Romanian, which belong to the same Indo-European language family, as ancestors of Germanic and Romance subdivisions, there is evidence of sound-symbolic reality in many linguistic fields. This subchapter measures the extent of phonosemantic representations in literature, analysing literary texts from the two languages.

The investigations of phonaesthetic manifestations use as corpus three poems which are considered to have a high degree of euphony in English and Romanian poetry: the last two stanzas of the poem ‘The Raven’, written by the American writer Edgar Allen Poe and published in 1845, the poem ‘Plumb’ (‘Lead’), written by the Romanian poet Geroge Bacovia and first read in 1900 and the refrain stanza of the experimental poem ‘Jabberwocky’ composed by the English writer Lewis Carroll, which appeared in his 1871 novel ‘Through the Looking-Glass’.

The research uses a cognitive approach to language, which is combined with structural investigation methodology. A mixed-method research tool was used as both qualitative and quantitative data can provide fruitful findings.

The first two literary texts, ‘The Raven’ and ‘Plumb’, were examined using the literary discourse analysis method, which is mainly qualitative but also provides informative quantitative statistics. The literary discourse analysis was preferred due to its methodology which perceives the text as a dynamic source of interaction, not as a static structure of investigation. The method is used to explore the way in which the three aforementioned writers manipulate the readers’ emotions through deliberate or unconscious phonosemantic devices.

The third poem, ‘Jabberwocky’ is a case study as it investigates in-depth aspects of the literary discourse, containing both intrinsic and instrumental elements. The case study research tool was chosen on account of the complexity of the analysis, which, using a cognitive semiotic approach, investigates the three-layered iconicity according to Charles Sanders Peirce’ model of the linguistic sign.

The phonaesthetic investigation of universal phoneme qualia in the literary discourse evidences the fact that sound-meaning associations in poetic discourse are extremely similar. The English and Romanian analysed literary texts offer proof which substantiate a relation between plosive consonants and unpleasantness or a general state of disquietude; furthermore, sibilants are perceived as soft but sad and melancholic, while liquids and nasals are pleasant and musical but sad. The vowels in the three poems illustrate their universal sound-symbolic patterns: the front vowel /i/ is perceived as happy, light and bright while back vowel /u/ denotes sadness and darkness. Consequently, the analysis demonstrates that there is a universal poetic language which uses phonosemantic tools to enhance its resonance. The poems in both languages offer similar data regarding the perceptual qualities individual phonemes relate to, data which are also consistent with previous findings, thus demonstrating the psychological existence of sound symbolism in the analysed literary texts.

The case study research, by juxtaposing different types of iconic relations, demonstrates the importance of Charles Peirce’ triadic model of the linguistic sign, and the fact that iconicity, when using an accurate theoretical framework, is easily recognisable.

The extensive use of phonaesthesia in literature proves that the innate non-arbitrary connections between sound and meanings can produce real literary masterpieces, whose fame is universal and timeless.

### **3. Universal Sound Symbolism in New Lexical Items in English**

The main aim of the current subchapter is to quantify and statistically measure sound-symbolic associations from a cross-linguistic perspective and to qualitatively assess the benefits or pitfalls of sound symbolism in learning/teaching EFL. The research, besides quantitative and qualitative measurements of new lexical items in English, also centres on two experiments whose aim is to determine whether sound symbolism can facilitate learning/teaching EFL. The experiments use a cross-linguistic approach, the participants being EFL students, whose native language is Romanian

In order to demonstrate that the new words display phonoemotional correspondences which connect individual phonemes with emotional qualia, they were analysed according to

their consonantal and vocalic occurrence, comparing individual phonemes with their psycholinguistic properties, demonstrated by previous studies (Magnus 2001, Fónagy 2001, Crystal 1994, Whissell 2017, Johansson et al. 2020) Using the ‘New Words Lists’ in The Oxford English Dictionary, we selected twenty-two adjectives that express human specific features (mostly moral) and have either positive or negative connotations. We discovered a high degree of correspondence between individual phonemes in adjectives with positive/negative meaning and the most pleasant/unpleasant-sounding phonemes in Crystal (1994) and Whissell’s (2017) lists. The lexical sound-symbolic investigation of the quality adjectives which are listed as new entries in The Oxford English Dictionary evidences a higher than chance fitting between phonetic form and word meaning and it also proves that languages possess an inherent mechanism which favours sound symbolic words as they better accommodate to the ever-changing communication environment.

Starting from the assumption that iconicity should not be excluded a priori from the EFL classroom, we further developed two experiments whose purpose was to evaluate the EFL students’ response to lexical decision tasks. The participants involved in the two experiments were sixty native Romanian students who studied English as their first foreign language in school and belonged to different levels of competence according to the Common European Framework of Reference for Languages (CEFR). The stimuli used in the two experiments were based on the adjectives in the new words list of the Oxford English Dictionary.

The results obtained in experiment 1 revealed bigger than chance correct answers for all the three groups, substantiating the fact that the adjectives display phonaesthetic features, which make them sound pleasant or unpleasant. This can also prove that their adoption in the dictionary is not arbitrary but, on the contrary, directly connected to their degree of iconicity.

The correct answer rates were not as high as in experiment 1 but they were, for most of the stimuli, higher than chance. This demonstrates that, considering the demanding nature of the task, sound symbolism is a cross linguistic phenomenon and it also has an advantageous influence in learning/teaching EFL.

As expected, the results for the three groups showed that the beginner level performed better than the intermediate and advanced levels, which demonstrates that sound symbolism is more prevalent at younger ages.

Phonaesthesia relies on people’s inherent response towards finding certain sounds pleasant or unpleasant or to other iconic responses that associate acoustic form with emotional and sensorial attributes. Unlike other sound symbolic phenomena, which are mostly language related (onomatopoeia, clustering), phonaesthesia is universal as phoneme iconicity has a global

reach. Showing that phonaesthesia is present in new lexical entries, we can assume that the sound symbolic phenomenon is also pervasive in everyday language and that human speech is, at times, the result of the complicity between language and emotions.

## **6. General Conclusions**

This academic research enthusiastically started as a result of a profound interest in semiotics and the nature of the linguistic sign as well as a consequence of linguistic intuition. Throughout the research process, most of the early hypotheses regarding the existence of non-arbitrary sound-symbolic phenomena in the English language proved right and, moreover, the research expanded to the Romanian language, evidencing the same satisfactory results. This came as a consequence to the growing number of novel studies which admit the role of both arbitrary and non-arbitrary elements in language, diverging from the twentieth century dogma which stated that languages are exclusively arbitrary. This thesis is, therefore, a contribution to the semiotic dialogue regarding the nature of the linguistic sign, advocating for a balanced approach which, while admitting the preeminence of the arbitrariness, tries to cast light on sound-symbolic phenomena that can be prolifically used in many language-related fields.

Sound-symbolic manifestations in language have been empirically demonstrated for many decades, as many lexicons around the world have large numbers of highly iconic words (i.e., ideophones, mimetics, etc.) which validates the fact that sound symbolism is not a negligible phenomenon. These iconic sound-meaning mappings have been substantiated in the English language as well, showing that a certain part of its lexicon contains iconic elements. Hence, the main purpose of the current thesis was not to solely demonstrate their existence in the English lexicon but also to cross-linguistically search for evidence of their psycholinguistic reality in the Romanian language. The phonosemantic extent of the Romanian lexicon has not been measured yet and, unfortunately, this paper only evidences sound-meaning mappings in certain specific linguistic categories. The empirical proof in this study, however, shows that there is fertile ground for future research that might lead to numerous interesting conclusions regarding language origin and other synchronic processes.

The preeminent hypothesis of this thesis is that individual phonemes display iconicity and that sound-meaning iconic associations are generated by their phonetic and phonological patterns, i.e., the position of the articulators, the place and manner of articulation, and, moreover, that these characteristics are universal, regardless of the minor articulatory

differences between languages. Thus, in contrasting the English and Romanian phonetic and phonological systems, this research and many other comparative studies clearly state that one-to-one phonemic congruence is extremely rare. Nonetheless, sound-symbolic studies have never regarded phones as an impediment to cross-linguistic iconic mappings since cardinal sounds, all over the globe, are uttered by using the same articulatory features. Both English and Romanian display a vocalic contrast between high vs. low, front vs. back or round vs. unround, the paramount sound-symbolic features in vowels, and this holds true for most of the spoken languages. Likewise, the most important consonantal characteristics, from a sound-symbolic perspective, i.e., voiced vs. voiceless, bilabials, nasals, obstruents, are present on a (near-)universal scale and, consequently, in the two target languages of this research.

## **Selected References**

- Assaneo, M. F., Nichols, J. I., Trevisan, M. A. (2011) 'The anatomy of onomatopoeia', *PloS one*, 6(12), e28317. <https://doi.org/10.1371/journal.pone.0028317>
- Blasi, D. E., et al. (2016) 'Sound- meaning association biases evidenced across thousands of languages', *PNAS*, 113 (39) 10818-10823.
- Chandler, D. (2007) *Semiotics. The Basics. Second edition*, Routledge, 2 Park Square, New York.
- Chomsky, N., Halle, M. (1968) *The sound pattern of English*, Harper & Row, New York.
- Comrie, B. (1989) *Language Universals and Linguistic Typology. Syntax and Morphology. Second Edition*, The University of Chicago Press, Chicago.
- Crystal, D. (1995) 'Phonaesthetically speaking', *English Today* 42, vol. 11, no. 2, pp. 8-12.
- Finegan, E. (2008) *Language: its structure and use. 5<sup>th</sup> edition*, Boston, MA: Thomson Wadsworth
- Fónagy, I. (1961 Fónagy, I. (2001) *Languages within languages. An evolutive approach*, John Benjamin Publishing Company, Foundations of semiotics series (no. 13)) 'Communication in Poetry', *Word* 17: 194-201.



- Hiraga, M. (2005) *Metaphor and Iconicity: A cognitive Approach to Analysing texts*, Palgrave MacMillan, New York.
- Hinton, L., Nicols J., Ohala J. J. (1994) *Sound Symbolism*, Cambridge University Press.
- Hockett, C. F. (1958) *A course in modern linguistics*. New York: Macmillan
- Hyman, L. (2008) 'Universals in phonology. Linguistic Review' - *Linguist Rev.* 25. 83-137. 10.1515/TLIR.2008.003
- Humboldt von, W. (1999) *On Language: On the Diversity of Human Language Construction and its Influence on the Mental Development of the Human Species*. ed. by Michael Losonsky, translated by Peter Heath, Cambridge University Press.
- Jakobson, R. (1966) 'Quest for the Essence of Language', *Selected Writings II* 51: 345-359. 92, No. 5, *Comparative Literature*, pp. 1026-1032 DOI: 10.2307/2906890.
- Jakobson, R., Waugh, L., R. (2002) *The Sound Shape of Language*, Mouton de Gruyter, Berlin.
- Jespersen, O. (1922) *Language - Its Nature, Development and Origin*, Allen and Unwin, London.
- Johansson, E. et al., (2020) 'The typology of sound symbolism: Defining macro-concepts via their semantic and phonetic features', *Linguistic Typology* 24, 2, 253-310.
- Köhler, W. (1929). *Gestalt psychology*. Liveright
- Knoeferle, K., et al., (2017) 'What drives sound symbolism? Different acoustic cues underlie sound-size and sound-shape mappings', *Scientific Reports* 7: 5562 DOI:10.1038/s41598-017-05965-y
- Lin, A. (2011) 'Animal Onomatopoeia: How accurate are they?', Available online: [https://www.academia.edu/5052178/Animal Onomatopoeia How accurate are they](https://www.academia.edu/5052178/Animal_Onomatopoeia_How_accurate_are_they)
- Maddieson, I. (1999) 'In search of universals', In *ICPhS-14*, 2521-2528.
- Magnus, M. (1998) *The Gods of the Word: Archetypes in the Consonants*, Truman State University Press. Kirksville,MO.
- Magnus, M. (2001) *What's in a Word? Studies in Phonosemantics*. Dissertation submitted for the degree of Doctor Philosophiae, NTNU.

- Marchand, H. (1958) 'Phonetic Symbolism in English Word Formation', *Indogermanische Forschungen* 64: 146-168.
- Marin, C. G. (2009) *Some Aspects of English-Romanian Contrastive Studies*, Language and Literature – European Landmarks of Identity, 5 (1) Universitatea din Pitești.
- Monaghan P., et al., (2014) 'How arbitrary is language?', *Phil. Trans. R. Soc. B* 369: 20130299. <http://dx.doi.org/10.1098/rstb.2013.0299>
- Mubarak, A. S. (2009) 'The Reality of English Phonaesthemes: A Theoretical and Empirical Investigation'
- Newman, S. (1933) 'Further Experiments in Phonetic Symbolism'. *The American Journal of Psychology*, 45(1), 53-75. doi:10.2307/1414186
- Nuckolls, J. B. (1999) 'The Case for Sound Symbolism', *Annual Review of Anthropology*, 28.
- Ohala, J. (1983) 'The Origin of Sound Patterns in Vocal Tract Constraints', In P. MacNeilage ed., *The Production of Speech*, 182-216, Berlin: Springer-Verlag.
- Peirce, C.S. (1931-1958) *Collected papers of Charles Sanders Peirce*, 8 vols. Edited by Charles Hartshorne, Paul Weiss, and Arthur Burks. Cambridge, Mass.: Harvard University Press.
- Ramachandran, V. S., Hubbard, M., E. (2001) 'Synaesthesia: A window into perception, thought and language', *Journal of Consciousness Studies* 8.3–34.
- Roach, P. (2009) *English Phonetics and Phonology. A Practical Course (fourth edition)*, Cambridge University Press, Cambridge.
- Saussure, F. de, (1959) *Course in General Linguistics*. New York: The Philosophical Library
- Sapir, E. (1929) 'A Study in Phonetic Symbolism', *Journal of Experimental Psychology* 12: 225-239.
- Shinohara, K., Kawahara, S. (2016) 'A Cross-linguistic Study of Sound Symbolism: The Images of Size', *Proceedings of the Annual Meeting of the Berkeley Linguistics Society*. 396-410.
- Smith, C. A. (2016) 'Tracking semantic change in fl- monomorphemes in the OED', *Journal of Historical Linguistics*, 6(2), 165–200. <https://doi.org/10.1075/jhl.6.2>
- Tsur, R. (1922) *What Makes Sound Patterns Expressive?* Duke University Press, Durham, NC.

Whissel, C. (1999) 'Phon symbolism and the emotional nature of sounds: Evidence of the preferential use of particular sounds in texts of differing emotional tone', *Perceptual and Motor Skills*, 89: 19-48.

Dicționarul Explicativ al Limbii Române, (1998), Univers Enciclopedic, București.

The Oxford English Dictionary, <https://public.oed.com/updates/new-words-list-january-2020/>