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BETWEEN THE SENSE AND THE LANGUAGE: A CORPUS-DRIVEN ANALYSIS OF THE LEXEME "SOUND" IN RUSSIAN

Duyu ile Dil Arasında: Rusçada "Ses" Sözcüğünün Derlem Temelli Analizi

Olena KOZAN*

ABSTRACT: This study investigates how the concept of sound is represented in the Russian language through a corpus-driven analysis of adjective + noun collocations with the lexeme *звук* (sound). Drawing on data from the Russian National Corpus (RNC), the research aims to identify both primary naming patterns, which directly describe the objective properties of sound, and secondary naming patterns, which extend these descriptions by referring to different sensory and conceptual domains. Special attention is paid to synesthetic metaphors, which reveal how the sensory domain of sound interacts with other sensory domains, such as vision, touch, smell and taste. The findings indicate that the majority of collocations fall into the category of secondary naming patterns, demonstrating that sound in Russian is frequently described using non-auditory attributes. The Color → Sound model emerges as the dominant synesthetic mapping, followed by Touch → Sound and Taste → Sound. By focusing on the lexeme *звук*, this study contributes to the field of sensory linguistics, offering insights into the cognitive and cultural conceptualization of sound in Russian. Furthermore, it highlights the importance of corpus-driven approach for the systematic analysis of sensory lexicon, providing a road-map that is applicable to foreign language teaching and translation training by revealing subtle semantic shifts and extensions in collocations with the lexeme *звук*.

Keywords: Russian, Sensory Linguistics, Corpus, Sound Lexeme, Synesthesia

ÖZ: Bu çalışmada, *звук* (ses) sözcüğü ile oluşturulan sıfat + isim eşdizimlerinin derlem temelli analizi yoluyla ses kavramının Rusçada nasıl yapılandırıldığı incelenmektedir. Çalışmanın temel amacı, Rusça Ulusal Derlemi (RNC) verilerine dayanarak ses olgusunun fiziksel özelliklerini doğrudan tanımlayan birincil adlandırma modellerini ve bu özellikleri farklı duyusal ve kavramsal alanlarla ilişkilendirerek genişleten ikincil adlandırma modellerini tespit etmektir. Bu çerçevede, sinestezi temelli metaforlar üzerinde odaklanılarak işitsel

* Assoc. Prof., Ankara Hacı Bayram Veli University, Department of Slavic Languages and Literatures, Ankara, olena.kozan@hbv.edu.tr, ORCID:0000-0002-7956-4567

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algının görme, dokunma, tat ve koku gibi diğer duyusal algılarla etkileşim modelleri de ele alınmaktadır. Araştırma bulguları, sesin Rus dili dizgesinde yapılandırılmasında ikincil adlandırma modellerinin baskın olduğunu ve birimin genellikle doğrudan işitsel özelliklerle değil, işitsel olmayan nitelikler ve kavramlarla tanımlandığını göstermektedir. Çalışma kapsamında en yaygın sinestezi modelinin Renk → Ses olduğu, bunu Dokunma → Ses ve Tat → Ses modellerinin takip ettiği belirlenmiştir. Bu araştırmada *звук* sözcüğü üzerinde durularak duyu dilbilimi alanına katkı sağlamanın yanı sıra, ses kavramlaştırmasının bilişsel ve kültürel boyutlarına ışık tutulmaktadır. Çalışmada derlem temelli yaklaşımın duyu söz varlığının sistematik incelenmesinde önemi vurgulanarak *звук* sözcüğü ile ilgili eşdizimlerin anlamsal dönüşümlerin ve genişlemelerin öne çıkarılmasıyla yabancı dil öğretimi ve çeviri eğitimi alanlarında kullanılabilen yol haritası ortaya konulmaktadır.

Anahtar Kelimeler: Rusça, Duyu Dilbilimi, Derlem, Ses Sözcüğü, Sinestezi

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Introduction

Sound, as one of the most fundamental sensory experiences, plays a crucial role in human perception and interaction with the environment. From the rhythmic patterns of music to the nuanced intonations of spoken language, sound shapes cognitive and communicative processes, serving as a bridge between the physical and perceptual domains. Across various scientific disciplines, sound has been extensively studied: in physics, as a wave phenomenon characterized by measurable properties such as frequency and amplitude; in psychology, as a perceptual experience shaped by cognitive processing; and in neuroscience, as a stimulus activating specific neural pathways. These interdisciplinary perspectives underscore the dual nature of sound as both a physical entity and a subjective experience.

In linguistics, sound is not only a subject of study in phonetics and phonology but also a rich semantic domain that reflects how humans conceptualize and categorize auditory experiences (Evans & Wilkins, 2000; Majid & Levinson, 2011; Viberg, 1984). Sensory linguistics, a field concerned with the interaction between sensory perception and linguistic expression, explores how languages encode sensory experiences, including sound, vision, touch, taste, and smell. This approach reveals systematic patterns in how sensory concepts are lexicalized, showing that sound is frequently described through spatial metaphors (e.g., "distant sound", "deep sound") or synesthetic expressions that blend sensory modalities (e.g., "bright sound," "soft sound"). Such linguistic patterns provide valuable insights into the cognitive and cultural frameworks underlying sensory perception. By examining the use of sound-related lexemes in diverse linguistic contexts, researchers can identify patterns of meaning, metaphor, and categorization unique to specific languages. However, a systematic and

large-scale analysis of a lexeme's usage in natural language can only be effectively conducted using a corpus-driven approach. Corpus linguistics provides the methodological tools necessary to analyze extensive textual data, offering empirical insights into the usage, collocational behavior, and contextual nuances of linguistic phenomena. This approach is indispensable for identifying meaningful trends and patterns that would be difficult, if not impossible, to capture through traditional manual analysis.

This study employs a corpus-driven approach, using the Russian National Corpus (RNC)[1] as the primary database. The focus is on the lexeme *звук* ('sound'), specifically examining its adjective + noun collocations to uncover primary naming patterns (direct descriptions of sound) and secondary naming patterns (metaphorical and synesthetic extensions). By analyzing these patterns in the RNC, this study reveals how auditory experiences are encoded, structured, and metaphorically extended in the Russian lexicon. Specifically, the study aims to:

- Identify and analyze the most frequent adjective + *звук* lexeme collocations in the main corpus;
- Categorize these collocations into primary naming patterns (e.g., descriptions of sound based on physical properties) and secondary naming patterns (e.g., metaphorical or synesthetic descriptions extending beyond the auditory domain);
- Examine synesthetic metaphors in these collocations to understand how cross-sensory conceptualizations enrich the meaning of *звук* lexeme.

By addressing these objectives, the study aims to contribute to both sensory linguistics and corpus-based research, while also offering practical insights for foreign language teaching and translation training.

Theoretical Framework

Naming patterns and lexical behavior

Naming patterns are a fundamental aspect of lexical behavior, reflecting how language structures and categorizes concepts. These patterns can be classified into primary naming patterns (Yartseva, 1998:336), which directly describe the inherent physical properties of an object or phenomenon (e.g., loud sound), and secondary naming patterns (Yartseva, 1998:336), which extend beyond literal descriptions, incorporating metaphorical or synesthetic elements (e.g., soft sound). This theoretical distinction is rooted in linguistic naming theory (Serebrennikov & Ufimtseva, 1977) and further developed

[1] https://ruscorpora.ru/ (Access date: 20.01.2025)

within the framework of cognitive linguistics (Kubryakova, 2004; Kubryakova, 2012).

The analysis of sensory lexemes such as *звук* requires a nuanced understanding of naming patterns, as these patterns determine how language encodes and categorizes perceptual phenomena. By distinguishing between primary and secondary naming patterns, this study systematically categorizes adjective + *звук* collocations, providing insights into the lexical behavior of auditory words. In Russian linguistics, studies on the naming patterns of auditory perception are well established. Researchers have analyzed the lexical encoding of auditory experiences across languages and in texts of different genres (Kolesnikova & Kryukova, 2019; Malishev, 2017). The primary objective of such studies has been to identify and classify linguistic units associated with the concept of sound. However, the lexeme *звук* itself and its collocational behavior in Russian have not yet been the subject of dedicated research.

The role of synesthesia in naming patterns

Synesthesia, as a linguistic phenomenon, represents a distinct type of secondary naming pattern in which sensory terms are metaphorically extended to describe perceptions across different sensory modalities (Sean, 1996). In this context, synesthetic expressions enrich sensory lexemes by associating them with other sensory domains. For instance, sound can be described as "bright" (*яркий звук*) or "soft" (*мягкий звук*), illustrating how auditory perception is mapped onto visual and tactile domains. This pattern illustrates the cognitive and linguistic mechanisms that enable synesthetic mappings, affirming the importance of synesthesia within sensory linguistics (Shinohara & Nakayama, 2011).

Sensory linguistics examines how sensory experiences—sight, sound, touch, taste, and smell—are encoded in language (Winter, 2019). It highlights the interplay between perception and linguistic expression, demonstrating how languages structure and conceptualize sensory phenomena. Within this framework, synesthesia is studied as a systematic and universal strategy that not only reflects sensory perception but also actively shapes it through metaphorical extensions (Blinnikov & Mitina, 2020; Gatsura, Akaeva, & Vinokurova, 2023; Motoki, Spence, & Velasco, 2023; Nikitina, 2024; Yaroshenko, 2023).

Corpus-driven approach and its advantages

This study employs a corpus-driven approach, which prioritizes the inductive analysis of linguistic data to uncover patterns and trends directly

from authentic language use. Unlike corpus-based methods, which rely on pre-established hypotheses, the corpus-driven approach allows researchers to explore linguistic phenomena in an open-ended manner, letting patterns emerge from the data itself (Tognini-Bonelli, 2001). The corpus-driven methodology is a cornerstone of contemporary linguistic research within the framework of digital humanities (Antopolskiy et al., 2023:87). Through techniques such as collocation analysis, concordance extraction, and frequency visualization, this approach provides an empirical basis for examining lexical behavior in context. A key advantage of the corpus-driven approach is its ability to reveal collocational patterns and lexical behaviors across different genres and registers. By analyzing adjective + noun combinations, researchers can identify primary and secondary naming patterns and explore their variation across linguistic contexts. Moreover, this method facilitates the study of synesthetic expressions, offering valuable insights into how sensory modalities interact in language.

Although the corpus-driven approach has been widely applied in various subfields of linguistics, its potential in sensory linguistics remains relatively underexplored. Studies employing corpus-driven methods to analyze sensory lexemes are limited (Kumcu, 2021; Lievers, 2015; Lievers & Huang, 2016), and research focusing specifically on the lexical behavior of auditory terms such as "sound" is particularly scarce. This gap underscores the need for systematic, data-driven investigations into the lexical behavior of sensory terms.

Methodology

This study employs a corpus-driven approach to investigate the collocational behavior and naming patterns of the lexeme *звук* in Russian. This approach facilitates a systematic analysis of authentic language data, capturing lexical patterns in real-world contexts. By focusing on adjective + noun collocations, the study aims to identify both primary and secondary naming patterns associated with *звук* lexeme. The study is guided by the following research questions:

- What are the most frequent adjective + *звук* lexeme collocations in the Russian National Corpus?
- How do these collocations reflect primary naming patterns?
- What secondary naming patterns emerge in adjective + *звук* lexeme collocations?
- How do synesthetic metaphors extend the meaning of *звук* lexeme beyond the auditory domain?

The primary data source for this study is the Russian National Corpus (RNC), a comprehensive linguistic database that provides rich insights into Russian language usage (Savchuk et al., 2024). Specifically, this study utilizes the main corpus, a general-purpose subcorpus, comprising 133,554 texts and 389,470,868 words and covering diverse genres such as journalism, literature, academic writing, and conversational language. The corpus is fully annotated with metadata and includes morphological, morphemic, syntactic, and semantic annotations. The data collection process involved querying the RNC using *звук* lexeme as the search term. The retrieval procedure was carried out in the following stages:

Stage 1: Collocation Extraction

The "lemmas and tags search" function in the main corpus was used, specifying *звук* lexeme as the lemma for Word 2. To extract adjective + noun collocations, "adjective" was selected under grammatical features in Word 1. Additional semantic tags for adjectives were applied, including size, distance, quantity, location, direction, time, duration, age, speed, physical qualities, and human qualities. The distance parameter was set to 1, ensuring that only directly adjacent adjective + *звук* lexeme collocations were extracted. Figure 1 illustrates the search criteria used for data extraction.

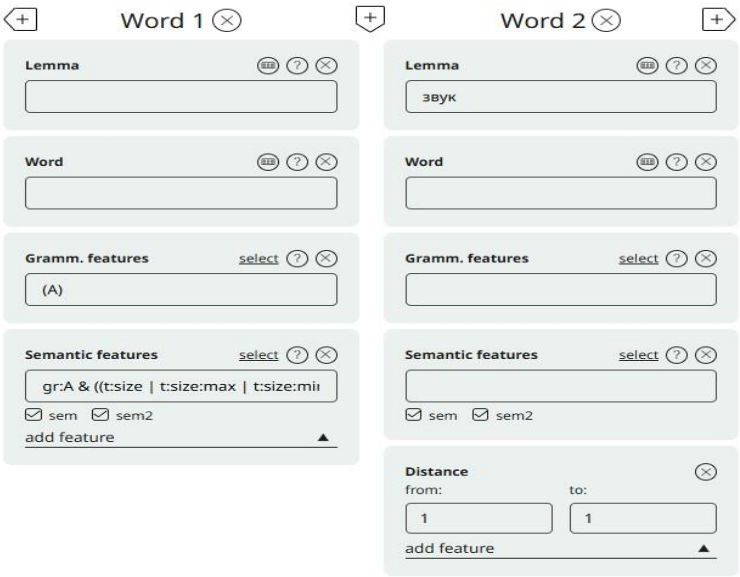

Figure 1. Search Criteria for *Звук* Lexeme in "Lemmas and Tags" Section

Stage 2: Collocation Processing and Categorization

Following the extraction of adjective + *звук* lexeme collocations, the data were analyzed using Frequency Analysis and Key Word in Context (KWIC) tools. These tools facilitated a detailed examination of collocational patterns, allowing for both quantitative and qualitative assessments of lexical behavior. The analytical process involved the following steps:

- Identifying the most frequent adjective + *звук* lexeme collocations and classifying them according to their semantic categories.
- Examining the contextual usage of these collocations through KWIC analysis to determine their predominant functions.
- Categorizing collocations as either primary naming patterns or secondary naming patterns.
- Paying particular attention to synesthetic metaphors, which represent cross-modal sensory mappings within the secondary naming patterns.

The corpus-driven methodology was selected for its ability to provide empirical evidence of linguistic behavior, ensuring that findings are derived from authentic language use rather than researcher intuition.

Results

Category of "size"

The search yielded 535 instances of various collocations. Based on the analysis of the most frequent collocations (minimum occurrence: 2)[2], the following key observations can be made:

1. In Russian, sound is conceptualized within the category of size across different dimensions, namely: volume — *малейший* (the tiniest), *маленький* (small), *большой* (large), *средний* (medium), *объемный* (extensional, sizeable, voluminous), *мельчайший* (the smallest), *небольшой* (minor), *немалый* (considerable), *минимальный* (minimal); height — *высокий* (high), *низкий* (low), *высочайший* (the highest); length — *короткий* (short), *длинный* (long), *бесконечный* (endless); width — *тонкий* (thin), *тоненький* (delicate, thin), *тончайший* (the thinnest), *широкий* (wide); depth — *глубокий* (deep), *мелкий* (shallow); and intensity/strength — *мощный* (powerful). These collocations can be considered models of primary naming patterns, as they convey information about objective reality.

[2] Within the category of size, there are isolated instances of usage that may represent author's choice. Throughout this study, such isolated examples are not included in the scope of analysis.

Additionally, the collocation *долгий звук* (long sound), associated with the category of time, also belongs to primary naming patterns.

2. Within the category of size, some secondary naming patterns emerge, incorporating an evaluative meaning, such as *великий* (great) and *возвышенный* (elevated, lofty). Initially, these adjectives were associated with physical size[3] — *великий* (large) and *возвышенный* (high). However, over time, they underwent lexicalization and are now used with an evaluative meaning, for example, *великие звуки бессмертного Баха*[4] (the great sounds of the immortal Bach) or *возвышенные звуки церковнославянской речи* (the elevated sounds of Church Slavonic speech).

3. Among secondary naming patterns, some collocations feature adjectives formed through lexicalization, such as *микроскопический звук* (microscopic, tiny, hardly visible), derived from *микроскоп* (microscope), as seen in *микроскопический анализ* (microscopic analysis).

4. The adjective *внушительный* (imposing, impressive) in the collocation *внушительный звук* (imposing sound) at first glance also functions as a secondary naming pattern. In modern Russian, *внушительный* is typically associated with size and quantity — for example, *внушительная сумма* (a considerable sum), *внушительная цифра* (an impressive figure), or *внушительный размер* (a substantial size). However, the adjective *внушительный* originates from the Old Slavonic verb *въноушити* (to make someone hear, to instill). Therefore, *внушительный*, which originally served as a primary naming pattern, underwent lexicalization and now functions as a secondary naming in contemporary Russian.

5. Synesthesia can also be observed in the collocation *тугой звук* (tight sound), which follows the Touch → Sound mapping model. The collocation *жирный звук* (thick sound) could be classified as partial synesthesia (following the Taste → Sound model), if the term *жирный* (fat, rich, thick) is interpreted through the lens of food and taste.

[3] Here and throughout the paper, the etymological data are drawn from the etymological dictionaries compiled by Preobrazhensky (1910) and Vasmer (1987).

[4] All examples presented here and throughout the study are drawn from the Russian National Corpus. All translations from Russian to English were completed by the author of this study.

Category of "distance"

The search revealed 218 examples with various collocations. Based on the analysis of the most frequent collocations, the following key points can be highlighted:

1. Primary naming patterns related to the category of *расстояние* (distance) include: *отдаленный* (distant), *далекий* (far), *близкий* (close, near-by), *дальний* (remote), *ближайший* (nearest).

2. Secondary naming patterns in this category include: *соседний звук* (near-by, next door sound). In this collocation, we observe the lexicalization of the adjective *соседний* (neighbouring) (compare: *сосед* (neighbour) → *соседний дом* (neighbouring house) → *соседний звук* (near-by sound)).

3. The search also visualized certain collocations related to the categories of *глубина* (depth) — *глубокий звук* (deep sound) — and *частота* (frequency), including *редкий звук* (rare sound) and *частый звук* (frequent sound). Some of these collocations (in the *глубина* (depth) category) were also identified under the *размер* (size) category. These collocations can be classified as primary naming patterns, as they describe sound in terms of objective reality

Category of "quantity"

The search revealed 41 examples with various collocations. Based on the analysis of the most frequent collocations, the following key points can be highlighted:

1. Primary naming patterns related to the category of quantity include: *большой* (large), *двойной* (double), *бесчисленный* (countless), *немногий* (few). This category overlaps with the *размер* (size) category and its *объем* (volume) subcategory.

2. The collocation *широкий звук* (broad sound) also belongs to primary naming patterns, but it is associated with the *ширина* (width) subcategory, which was discussed within the *размер* (size) group.

3. Some collocations may function as both primary and secondary naming patterns. For example, *ничтожный звук* (insignificant sound) can convey information about quantity, in which case it serves as a primary naming pattern. However, the same collocation can also carry a pejorative connotation (for instance, *ничтожный звук* (miserable, disgusting sound)), thus functioning as a secondary naming pattern. (Compare: *Так в горах от ничтожного звука, от выстрела из охотничьего ружья начинает*

сыпаться по крутому склону блестящей полоской снег (In the mountains, from an *insignificant sound*, from the shot of a hunting rifle, snow begins to slide down the steep slope in a sparkling stream) — *Может быть, видя нас слишком ничтожными, они начинают находить признаком хорошего вкуса издавать ничтожные звуки* (Perhaps, seeing us as too miserable, they begin to consider it a mark of good taste to produce *miserable sounds*).

Category of "place"

The search revealed 87 examples with various collocations. Based on the analysis of the most frequent collocations, the following key points can be highlighted:

1. Primary naming patterns related to the category of *место* (place) include: *внешний* (external), *окружающий* (surrounding), *нездешний* (non-local), *подводный* (underwater), *внутренний* (internal), *наружный* (outer), *закулисный* (backstage), *восточный* (eastern), *подземный* (underground), *степной* (steppe), *передний* (front).

2. A secondary naming pattern is represented by the collocation *противный звук* (unpleasant sound). In this example, the lexicalization of the adjective *противный* (unpleasant) can be observed. Historically, *противный* derived from *против* (opposite), as in *противная сторона* (opposite side), but over time, it developed the meaning of "unpleasant" and is now used to describe sensory perception, as in *противный звук* (unpleasant sound).

Category of "time"

The search revealed 1,015 examples with various collocations. Based on the analysis of the most frequent collocations, the following key points can be highlighted:

1. Some naming patterns related to the category of *время* (time) are accepted in contemporary Russian as primary; however, they are essentially secondary, as their original usage was associated not with time, but with the category of space (length, depth, distance, etc.). The primary meanings were established using etymological dictionaries. For example, we identified that *короткий* (short) and *краткий* (brief) function as primary naming patterns within the category of space (compare: *чрѣсти* (to cut) → *кратъкъ* → *короткий* (short)). This group includes collocations, some of which were already listed in the categories of *размер* (size) and *расстояние* (distance),

such as *короткий* (short), *далекий* (distant), *близкий* (close), *длинный* (long), *длительный* (prolonged), and *краткий* (brief).

2. Primary naming patterns directly related to the category of *время* (time) include: *последний* (last), *новый* (new), *ночной* (nighttime), *долгий* (long), *прежний* (former), *ритмичный* (rhythmic), *внезапный* (sudden), *весенний* (spring), *продолжительный* (prolonged), *постоянный* (constant), *беспрерывный* (uninterrupted), *нескончаемый* (endless), *первоначальный* (initial), *предварительный* (preliminary), *ранний* (early), *синхронный* (synchronous), *бесконечный* (infinite), *будущий* (future), *вечный* (eternal), *мгновенный* (instantaneous), *мимолетный* (fleeting), *первобытный* (primitive), and *первозданный* (pristine, primary). In some collocations, the semantic feature of "speed" also emerges, such as in *мгновенный звук* (instantaneous sound).

3. Secondary naming patterns are represented by the following collocations: *резкий звук* (sharp sound), showing the lexicalization of *резкий* (sharp), derived from *резати* (to cut); *редкий звук* (rare sound) (compare to *редкий туман* (thin fog), *редкий лес* (sparse forest), and *редкий гость* (infrequent guest)); *настоящий звук* (genuine sound), showing the lexicalization of *настоящий* (genuine), originally meaning "present time"; *свежий звук* (energetic, blooming sound) (compare to *свежее мясо* (fresh meat) and *свежий воздух* (fresh air)); *решительный звук* (assertive, strong, resolute sound) (compare to *решить проблему* (solve a problem), *решиться на трудный шаг* (dare to take a difficult step), and *решительный человек* (determined person)); *летучий звук* (fleeting sound), derived from *летать* (to fly).

Category of "age"

The search revealed 53 examples with various collocations. Based on the analysis of the most frequent collocations, the following key points can be highlighted:

1. The primary naming patterns in this category include: *древний* (ancient), *молодой* (young), *старинный* (old, historical), *юный* (youthful).

2. Some naming patterns are primary but with broader semantics, aligning with the category of *размер* (size), such as *маленький звук* (small sound) and *большой звук* (large sound).

3. Sound can originate from within the body, specifically from the chest, in which case the collocation *грудной звук* (chest sound) can be classified as a primary naming pattern. The search revealed this collocation under the tag

"age" because *грудной* (chest; breast) is also connected with the collocation *грудной ребенок* (infant; a child at the breast).

4. The collocation *солидный звук* (solid, strong) can be considered a secondary naming pattern. Compare: *солидный характер* (reliable character) – *солидный человек* (respectable person) – *солидная фирма* (reputable company) – *солидный возраст* (respectable age) – *солидная сумма* (substantial sum), etc.

Category "speed"

The search identified 187 examples with various collocations. Based on the analysis of the most frequent collocations, the following key points can be highlighted:

1. Primary naming patterns in this category include: *медленный* (slow), *быстрый* (fast).

2. Primary naming patterns in this category also include collocations associated with the categories of *size* and *time*, such as *мгновенный звук* (instant sound).

3. Some naming patterns are considered primary; however, although they are classified under the "speed" category in the corpus, semantically they belong to the category of "force"/"intensity", such as *тихий звук* (quiet sound).

4. Secondary naming patterns are represented by collocations such as *тягучий звук* (monotonous/dull/boring sound), which follows the semantic shift from *тянуть* (to stretch) → *тягучий мёд* (viscous honey) → *тягучая мелодия* (plaintive melody); *бойкий звук* (lively sound), derived from *бить* (to beat) → *бойкий мальчик* (lively boy) → *бойкая торговля* (brisk trade); *резвый звук* (frisky sound), following *резать* (to cut) → *резвый бег* (swift run) → *резвый конь* (spirited horse); *ленивый звук* (lazy sound), comparable to *ленивый человек* (lazy person) – *ленивая походка* (lazy gait); *стремительный звук* (rapid sound), derived from *стремиться* (to strive) → *стремительный рост* (rapid growth); and *ударный звук* (accented sound), linked to *ударить* (to strike) → *ударная волна* (shockwave) – *ударная бригада* (shock brigade) – *ударный слог* (stressed syllable).

Category "human qualities"

The search identified 2,342 examples with various collocations. Based on the analysis of the most frequent collocations, the following key points can be highlighted:

1. Some collocations in this category can be considered primary naming patterns, although at first glance they appear to be associated with human qualities. In other words, there is a semantic shift from a phenomenon (sound) to a person. For example, *тихий звук* (quiet sound) → *тихий человек* (quiet person). This category includes collocations such as *глухой* (dull), *музыкальный* (musical), *тихий* (quiet), and *спокойный* (calm).

2. The rest of the collocations with the lexeme *sound*, which are visualized in the corpus with the label "human qualities," belong to secondary naming patterns. In other words, human qualities are transferred to sound as descriptors (compare: *веселый человек* (cheerful person) → *веселый звук* (cheerful sound)). This is the largest group and includes collocations originally associated with human qualities or emotions, such as: *слабый* (weak), *нежный* (tender), *веселый* (cheerful), *живой* (lively), *приятный* (pleasant), *неприятный* (unpleasant), *подозрительный* (suspicious), *визгливый* (screech, squeal), *скорбный* (mournful), *грозный* (menacing), *страстный* (passionate), *грубый* (rough), *робкий* (timid), *жалкий* (pitiful), *мирный* (peaceful), *воинственный* (militant), *верный* (faithful), *неверный* (unfaithful), *отчаянный* (desperate), *мерзкий* (disgraceful, vile), *назойливый* (intrusive), *вдохновенный* (inspired), *милый* (sweet), *нервный* (nervous), *бешеный* (furious), *задорный* (spirited), *задумчивый* (pensive), *ласковый* (affectionate), *сдержанный* (reserved), *сердитый* (angry), *суровый* (severe), *торопливый* (hurried), *блаженный* (blissful), *индифферентный* (indifferent), *благородный* (noble), *ворчливый* (grumpy), *гордый* (proud), *злобный* (malicious), *мужественный* (courageous), *осторожный* (cautious), *безумный* (insane), *беспокойный* (restless), *глупый* (foolish), *кроткий* (meek), *самостоятельный* (independent), *святой* (holy), *скучный* (boring), *слезливый* (tearful), *царственный* (regal), *плаксивый* (whiny), *бесхитростный* (artless), *добродушный* (good-natured), *наивный* (naive), *насмешливый* (mocking), *нежнейший* (most tender), *неосторожный* (careless), *подлый* (mean), *презрительный* (contemptuous), *приветливый* (friendly), *решительный* (decisive), *серьезный* (serious), *смелый* (brave), *смятенный* (confused), *чувственный* (sensual), *наглый* (bold, insolent), *буйный* (wild, blustering), *властный* (authoritative), *въедливый* (piercing), *деликатный* (delicate), *добрый* (kind), *жадный* (greedy), *злой* (angry),

ленивый (lazy), *лицемерный* (hypocritical), *любопытный* (curious), *мечтательный* (dreamy), *навязчивый* (intrusive), *настойчивый* (persistent), *настырный* (pushy), *неуверенный* (insecure), *осмысленный* (meaningful), *покорный* (submissive), *развеселый* (merry), *разудалый* (carefree), *свирепый* (fierce), *сердечный* (cordial), *стыдливый* (shy), *сумасшедший* (crazy), *требовательный* (demanding), *угрюмый* (sullen), *упрямый* (stubborn), *хлопотливый* (fussy), *эмоциональный* (emotional).

3. Secondary naming patterns also include collocations that serve as primary naming patterns for certain objects but shift into secondary patterns when describing human qualities or sounds. For example, compare: *простой человек* (ordinary person) – *простой звук* (ordinary sound). Examples include: *чистый* (pure), *легкий* (light), *фальшивый* (false), *простой* (simple), *тяжелый* (heavy), *дикий* (wild), *крепкий* (strong), *постоянный* (constant), *трудный* (difficult), *неразборчивый* (incoherent), *нескладный* (awkward), *нормальный* (normal), *причудливый* (quirky), *средний* (average), *цельный* (coherent), *порывистый* (impulsive), *разухабистый* (reckless), *характерный* (distinctive).

4. The synesthetic model of Touch → Sound is reflected in the following collocations: *мягкий звук* (soft sound), *жесткий звук* (harsh sound), *сухой звук* (dry sound), *твердый звук* (hard sound), *мокрый звук* (wet sound).

Category "form"

The search identified 424 examples with various collocations. Based on the analysis of the most frequent collocations, the following observations can be made:

1. All collocations in this category represent secondary naming patterns, forming a synesthetic model.

2. The synesthetic model Touch → Sound is evident in collocations such as: *ровный звук* (even sound), *круглый звук* (round sound), *открытый звук* (open sound), *острый звук* (sharp sound), *тупой звук* (dull sound), *неровный звук* (uneven sound), *плотный звук* (dense sound), *выпуклый звук* (convex sound), *округлый звук* (rounded sound), *плоский звук* (flat sound), *полый звук* (hollow sound).

Category "colour / light"

The search identified 166 examples with various collocations. Based on the analysis of the most frequent collocations, the following observations can be made:

1. All collocations in this category represent secondary naming patterns, forming a synesthetic model. The synesthetic model *Color → Sound* is evident in collocations such as: *яркий звук* (bright sound), *хрустальный звук* (crystal-clear sound), *серебристый звук* (silvery sound), *однотонный звук* (monotone sound), *светлый звук* (light sound), *темный звук* (dark sound), *тусклый звук* (dim sound), *матовый звук* (matte sound), *пестрый звук* (variegated sound), *бледный звук* (pale sound), *золотистый звук* (golden sound).

2. Colour names also occur in collocations with the lexeme *звук*, though in most cases these represent authorial usage, with the collocation placed in quotation marks. For example: *С самого начала поражает, я бы сказал, «золотой звук» скрипки в его руках* (From the very beginning, I would say, the "golden sound" of the violin in his hands is striking).

3. Among colour names, the collocation *черный звук* (black sound) represents a fully developed synesthetic transfer. For example: *Заревел гудок, поглотив своим черным звуком людской говор* (The horn roared, swallowing the murmur of voices with its black sound).

Category "temperature"

In this category, we identified three collocations that represent synesthesia according to the model *Touch → Sound*, specifically: *холодный звук* (cold sound), *теплый звук* (warm sound) and *горячий звук* (hot sound).

Category "taste"

The search identified 91 examples with various collocations. The most frequent collocations represent synesthesia according to the model *Taste → Sound*, specifically: *сладкий звук* (sweet sound), *горький звук* (bitter sound), *сладчайший звук* (sweetest sound), *смачный звук* (tasty sound), *вкусный звук* (flavorful sound).

Category "smell"

This category contained only two examples, which represent individual usage of collocations: *вонючий* (smelly), *пахучий* (fragrant).

Discussion and Conclusion

"Sound" lexeme in the Russian language is described through various collocations, some of which convey objective characteristics of the phenomenon and, therefore, belong to primary naming patterns. However, the majority of collocations related to sound in Russian represent secondary

naming patterns. The distribution of collocations containing the keyword "sound" is illustrated in Figure 2.

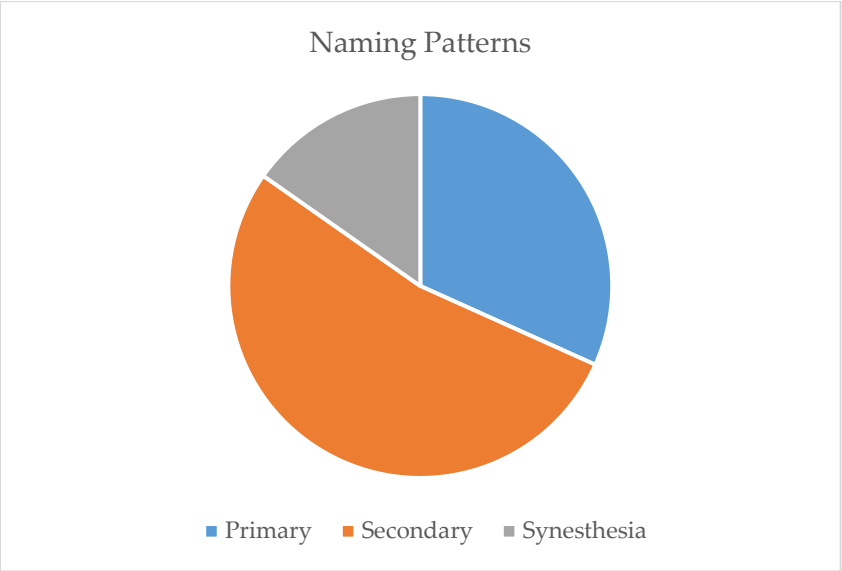

Figure 2. Naming Patterns in Collocations with the Lexeme "Sound"

Primary naming patterns in collocations with the lexeme "sound" describe the objective characteristics of the phenomenon, based on the categories of "size", "distance", "quantity", "place", "time", "age" and "speed". The most numerous group of frequent collocations correlates with the categories of "size" and "time". In other words, sound in the Russian language is primarily conceptualized as a spatial phenomenon and as an entity associated with temporal indicators. Figure 3 illustrates the distribution of primary naming patterns across categories.

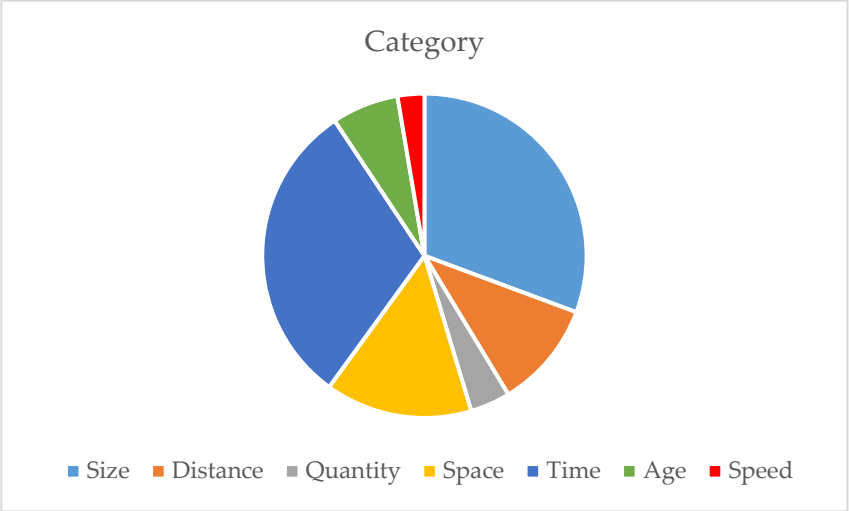

Figure 3. Primary Naming Patterns in Collocations with the Lexeme “Sound”: Categories

The majority of collocations with the lexeme "sound" belong to secondary naming patterns. In other words, sound can be depicted through qualities that are not inherently linked to auditory perception. Secondary naming patterns originate from various conceptual categories, with the largest group corresponding to the category of qualities of a person or object. The prevalence of collocates in this category can be attributed to the significant role sound plays in everyday human life. In some categories, only a single instance of a secondary naming pattern is observed, specifically in the categories of distance, quantity, place, and age. Figure 4 illustrates the distribution of secondary naming patterns across categories, excluding single-instance cases.

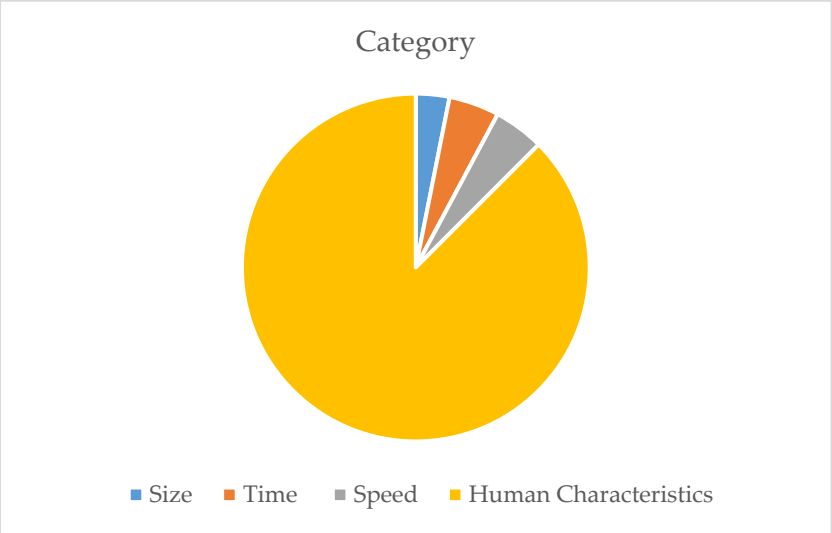

Figure 4. Secondary Naming Patterns in Collocations with the Lexeme "Sound": Categories

Some collocations form multidimensional structures that can function as either primary or secondary naming patterns depending on the context. Such structures may present challenges in translation due to their dual nature. For instance, *ничтожный* can mean "insignificant, almost inaudible sound" or "meaningless, not worth attention." Secondary naming patterns reflect the linguistic worldview and thus hold significant potential for foreign language learning and translation teaching. Analyzing these patterns can enhance semantic awareness in language learners. For example, an analysis of the secondary naming pattern in the collocation *солидный звук* (firm; massive; impressive; reputable) reveals that its semantics extend to include the feature of trust and admiration, which must be considered during translation. Compare: *Едва с солидным звуком захлопнулась массивная дверь «Себринга», как ты почувствовал себя в другом мире.* - "As soon as the massive door of the Sebring closed with an impressive thud, you felt like you were in another world."

Instances of synesthesia have been identified in collocations involving the key lexeme "sound." The primary source of synesthetic metaphors is visual perception, with the most prominent synesthetic model being Colour → Sound. In this model, collocations typically involve tone descriptors (e.g., dark, golden) rather than specific colour names. The second most active

source of synesthesia is the Touch → Sound model. While traditional approaches to synesthesia recognize synesthetic transitions within the Touch$^{\text{Temperature}}$ → Sound category (e.g., cold sound), we propose extending this model to include additional categories related to sensory perception and embodiment (Rebeco, 2015). In this context, we identify the Touch$^{\text{Quality of an Object}}$ → Sound model (e.g., soft sound, dry sound) and the Touch$^{\text{Shape}}$ → Sound model (e.g., round sound, flat sound). Beyond these models, another source of synesthetic metaphors is the Taste → Sound model (e.g., sweet sound). The most frequently used taste-related terms are "sweet" and "bitter". Other taste-based metaphors (e.g., sour, salty) primarily appear in individual stylistic choices. The Smell → Sound model, which reflects the potential interrelation between olfactory and auditory perception, occurs in individual usage and is therefore considered inactive. Figure 5 illustrates the distribution of synesthesia across categories, excluding single-instance cases.

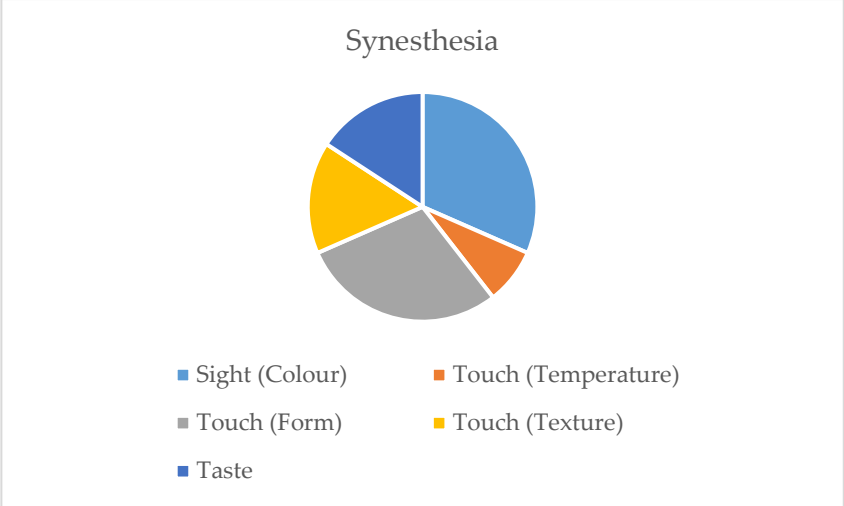

Figure 5. Synesthesia in Collocations with the Lexeme "Sound": Categories

The analysis of synesthesia can contribute to the development of creative thinking, as synesthetic models, despite their universal nature, also reflect the unique characteristics of individual languages. In this context, cross-linguistic comparisons of synesthetic models represent a valuable direction for future research.

The outcomes of this research create a starting point for subsequent studies exploring similar linguistic phenomena. A comparative study using

the "Russian Classic Literature" subcorpus could be particularly valuable in tracking the collocational patterns of the lexeme "sound" in literary texts. Future research could also examine "sound lexemes" within various semantic categories. For instance, a corpus-based analysis could explore sounds produced by humans (e.g., crying, shouting, laughing), sounds associated with nature, and other onomasiological categories. Finally, expanding the analysis to other languages, such as Turkish, can contribute to the linguistic typology. Cross-linguistic studies, drawing on corpora from genetically and typologically diverse languages, for instance Russian and Turkish, can provide valuable insights into both universal cognitive mechanisms and culture-specific strategies involved in the linguistic encoding of auditory perception.

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