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Linguistic expression of sound in bird names motivated by their vocalization

Bachelor thesis

Lukáš Gažák

Supervisor: Mgr. Petr Kos, Ph.D., FF JU

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Annotation

This thesis aims to describe and clarify the way sound is expressed in language. This is achieved by analysis of bird names motivated by their vocalization. The thesis is conceived from the onomasiological point of view where the starting point of the analysis is the referent to be named. In the theoretical part of the thesis, onomasiology and Lakoff's Idealised Cognitive Model are described. Analysis of the bird names is carried out in within the particular ways in which sound is coded in language. The resulting data are quantified and interpreted.

Keywords: bird names, metaphor, metonymy, onomasiology, onomatopoeia, sound in language

Prohlašuji, že jsem autorem této kvalifikační práce a že jsem ji vypracoval(a) pouze s použitím pramenů a literatury uvedených v seznamu použitých zdrojů.

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Contents

1 Introduction

Birds are very elusive animals. If it were not for their prominent vocalization, many of them would go unnoticed, if not deliberately searched for. In the majority of cases, we as people hear bird's vocalization before making any visual contact with it, if at all. This fact makes the bird's vocalization a very distinct feature for us, which becomes often reflected in their names. In this thesis, we will be concerned with such names in relation to the question of how bird vocalization gets expressed in a language.

There are three ways how the vocalizations can be expressed at the language level. The perception of a sound can be expressed either by using an existing lexeme expressing the sound (as *screech bird*), metaphorically by referring to the sound by a word from another domain (as in *cat bird*), or by a sound imitation of the unarticulated sound through the phonological system of language (e.g., *pee bird*).

The work aims to analyse the names, which are primarily motivated by the perception of birds vocalization, categorize them according to the way the perception of the sound is manifested on the language level, and further analyse, quantify, and critically evaluate individual categories. The work thus outlines the tendency of how sound perception is expressed in the English language.

The work is primarily conceived from an onomasiological point of view, in which the starting point of the analysis is a concept or a referent that needs naming. I will thus first describe the onomasiological approach to word formation and anchor this approach in Dokulil's onomasiological model. I will then outline the context in which referents are named and then introduce some key notions of cognitive linguistics, namely Lakoff's idealised cognitive model and the role of onomatopoeia, and metonymy and metaphor in naming. In the practical part of the thesis, I will categorise the names into groups depending on the way and complexity of the coding of the sound. I will further analyse, quantify, and critically evaluate individual names.

2 Onomasiology

Onomasiology as a term has its origin in the Greek word *onomāzo* ('to name') and was first used by Zauner when he refers to the branch of linguistics that is concerned with the relations between concepts (the things that need naming) and the names they are assigned with (Fernández-Domínguez, 2019:2). The very starting point of onomasiology is the concept, where the question asked is what word (a name) it will be assigned with. Contrarily, semasiology starts with a word and then looks for its meaning.

Fernández-Domínguez (2019:2) defines the onomasiological approach as "a theoretical framework that emphasizes the cognitive semantic component of language and the primacy of extra-linguistic reality in the process of naming. With a tangible background in the functional perspective of the Prague School of Linguistics, this approach believes that name giving is essentially governed by the needs of language users, and hence assigns a subordinate role to the traditional levels of linguistic description. This stance characterizes the onomasiological framework in opposition to other theories of language, especially generativism, which first tackle the form of linguistic material and then move on to meaning."

As mentioned above during the comparison with generativism, the main direction of onomasiological thinking is from the referent to the name assigned to it. This search for a name is a process with numerous steps, some of them are specific to different languages but the core steps are universal to all of them. These main points were defined by the Czech linguist Miloš Dokulil.

Dokulil, who is regarded by Fernández-Domínguez (2019:3) as the founder of the onomasiological approach, used the Czech language as a source for his linguistic studies concerned with word-formation. Dokulil (1962:29) explains that for a word to be formed a generalized version of perceived reality must be processed, sorted, and categorized in mind, all in correspondence with specific naming rules of a given language.

The main idea of onomasiology, proposed by Schuchardt and colleagues at the beginning of the 20th century, is that names were created in a specific social context and with a specific object in mind (Fernández-Domínguez, 2019:3). All this should be taken into consideration when following the onomasiological model of thinking.

3 Onomasiological model

When Dokulil applied the onomasiological lens on the process of word-formation, he created the main onomasiological model. According to Dokulil (1962:29), the process of naming begins with a referent in a context, a perceived reality of this referent is then processed in the mind, which leads to an onomasiological structure.

The onomasiological structure has two main components: onomasiological base (conceptual class) and onomasiological mark (determiner). The referent is first sorted into an existing category, which is expressed in the onomasiological base, and the onomasiological mark that distinguishes the given concept from other members of the existing category.

We can see this in particular examples. If the context is that a person sees an unknown phenomenon (a bird) outside their window, the salient features from this context will possibly be dimensions, shape, colour, and bird-like features (a bill, feathers, wings, specific legs, etc.). These bird-like features correspond with the parts of a general idea of a bird (already existing concept), thus categorizing the phenomenon as a bird which leads to the onomasiological base. From this context, according to the perceived salient features, the base is assigned with the onomasiological mark, which differentiates the particular concept from other members of the category with the same onomasiological base. The result of this process are names such as *blackbird, white-bird, devil-bird, longwing, smallster* (referring to its small size).

3.1 Context of referent

As mentioned before, the context of the referent is crucial for the onomasiological approach; it is the first thing to be analysed as it influences every other consecutive step of the onomasiological model. In our case, the referent is a bird. Naturally, there are many contexts in which a bird can be encountered.

The context, in this case, is the way and with what kind of intention a person approaches a given bird. Different contexts would be for example an ordinary uneducated

farmer, who gets in contact with a particular bird on everyday basis when he works in a field. In this case, his only intention is to name the reality around him. He hears the vocalization, and he refers to the bird according to it- as *craa.* Alternatively, he works with the knowledge available to him. He perhaps knows that some birds are called swallows, some are wrens, some are doves and that is all. He does not take into consideration if the naming is scientifically accurate, he needs to name the unknown reality and uses the tools available to him. Thus, he regards the bird as some kind of a swallow, even though in reality it could be a different bird. He then notices that the bird's vocalization is particularly loud and high, resulting in him naming the bird *screech-swallow.*

A different context would be an ornithologist, who names the bird with scientific intentions and thoroughly examines all the bird's features to correctly classify it into a taxon. In this context, the bird's vocalization would be less likely to be used in the naming, with anatomical features like colour being more common. From this context, the created names could be, for example, *common sandpiper* or *great grey shrike.* As the majority of the birds already had a folk name, the ornithologists specify the folk taxonomy with scientific attributes.

3.2 Idealized cognitive model

We as humans organize our knowledge into structures called idealized cognitive models, or ICMs (Lakoff, 1987:68). Here we take a look back at Dokulil's idea that for a word to be formed a generalized version of perceived reality must be processed, sorted, and categorized in the mind. This "generalized version of perceived reality" can be understood as Lakoff's ICM.

Idealized cognitive models consist of all the acquired knowledge in the mind of a person about a given phenomenon, given that only the most salient features get into mind. All the ideas about a certain thing that come to mind when actively thinking about it are the ICM of the thing. To give us a practical example of what ICM is, Lakoff (1987:68) explains the ICM of the word *Tuesday*. He explains that for us to understand the word, we need to have the knowledge of what a *day* is (defined by the sun movement, sunrise to sunset) and

of the seven-day concept of a *week*, a cycle consisted of seven parts in a sequence, the second being *Tuesday*. Then he shows the same on the concept of a weekend; we need to know that the first five parts of the cycle are workdays and the last two are then the weekend. The word idealized means that the cognitive model does not reflect reality in exact correspondence. What makes the model of the weekend idealized is the fact that the concept of a seven-day week is not standard throughout the world (Lakoff, 1987:69).

We as humans are not able to perceive and consider reality in all of its aspects, instead, we operate in the extents of ICM's, which are basically Dokulil's "reflection of perceived reality". We only notice salient features of the phenomenon, that are then filtered in our minds. The ICM is the outcome of this process.

To show possible ICMs of birds we can look at the case study of all the different names for a swift (*Apus apus*) and a whitethroat (*Sylvia communis*). General ICMs of these birds would be more extensive with additional connections to different domains. These ICMs were created only from the birds' features that were highly salient and became a part of their naming. The particular names derived from different parts of the swift's ICM can be found in Table 1.

	Parts of the idealsied cognitive model					
	colour	**movement**	**sound**	**looks**	**location**	**bird**
Names where the particular parts of the ICM are expressed	black swift black martin black martlet black martin black martlet black screeck devil devil's bird devil's swift devil-swallow devil-screecher deviling deviling devillin devlin davlin diwling devilton dicky-develin screech-devil devil-skriker devil-squeaker devil-squeak tommy-devil devil-a-bit jacky-devil kill-devil skir-devil skeer-devil	swift sky-flapper flap-wing swing-devil bullfit swift swallow skir-devil skeer-devil	screech screecher screech-jack screech-swallow screech-martin screek screw black screeck screamer squealer jack-squealer devil-screecher screech-devil devil-skriker devil-squeaker devil-squeak skeer-devil skir-devil	whip whip-tree mattock tommy-devil devil-a-bit anchor-bird longwing	church-swallow church-martinet tile-swallow	swift swallow screech-swallow black martin martnet martinet martlet black martlet mertin mairtin screech-martin hawk-swallow cran-swallow crane-swallow devil-swallow anchor-bird church-swallow church-martinet tile-swallow

Table 1: ICM of a swift

What is apparent from Table 1 is that there were five parts in the ICM of a swift- its colour, movement, sound, looks and association with birds, all of them being the most salient features of the swift. Depending on the frequency of names in the groups, we could guess the level of the saliency of the individual features of the bird. Its colour being the most salient, then its association with birds and then its sound; movement and looks concerning only a small part of the names, even though the bird's most used name is related to its fast

movement- *a swift*, and if we look closely, we may notice that some of the names combine more parts of the ICM to give more accurate reference.

Swift is typically black, so all the names from the colour group express the blackness in different ways - be it just simply using the adjective *black - black swift, black martin, black martlet, and black screeck;* or with a metaphorical naming with the variations of the word *devil - devil, devil's bird, devil's swift, devil-swallow, devil screecher, deviling, devillin, devlin, davlin, diwling, devilton, dicky-develin, screech-devil, devil-skriker, devil-squeaker, devil-squeak, tommy-devil, devil-a-bit, jacky-devil, kill-devil, skir-devil,* and *skeer-devil.*

Its association with birds is expressed in the way of naming the swift with different more established birds with added specifications that point towards swift as seen in names *black martlet, black martin, screech-swallow, swift swallow, screech martin, church-martinet, church-swallow, devil swallow, and tile-swallow.* The most frequent category of birds the swift was categorised into was the category of swallows. The reason for this was the widespreadness of the swallow, which was the reason why the swallow became a linguistic icon (Gosler, 2019). Another reason for this could be the similarity of their silhouettes, mainly the V shape of their tails.

The most salient feature related to movement is swift's speed. This feature is expressed in several ways, be it by the adjective *swift* as seen in the name *swift swallow* and by the nominalisation of it as in its most known name *a swift*, by variation of the word scare[1] in *skir-devil* and *skeer-devil,* or by the word *flit*[2] in the name *bullflit*. Another expression of its movement is realised by the verb *flap*, describing its style of flight. This can be seen in the names *flap-wing* and *sky-flapper*. Lastly, movement of the swift is expressed by the word *swing* in the name *swing-devil,* suggesting the manner in which it moves between branches.

Its salient features related to looks are mostly concerned with the shape of the bird's silhouette. This is realised by the words *whip, mattock* and *anchor* as can be seen in the names

[1] perh. with reference to its dark colour and rapid flight. (OED)

[2] *flit* Suss., indicates a rapid, fluttering movement, such as that produced by the Swift in flight (Desfayes, 1998)

whip, whip-tree, mattock, and *anchor-bird.* Its distinct length of wings is expressed by a compound word of these features as can be seen in the name *longwing*. The size of a swift is reflected in the names[3] *tommy-devil* and *devil-a-bit.*

The most frequently combined parts of the ICM were colour and sound. As apparent from the names *black screeck, devil-screecher, screech-devil, devil-skriker, devil-squeak, skeer-devil, skir-devil, and devil-squeaker.* This way, the bird has the most chance to be recognised.

In the ICM, the sound was among the most salient features of the bird. I intentionally left out the analysis of the names stemming from this part of its ICM, as this is the main topic of this thesis and will be analysed in detail in the practical part of the thesis.

3.3 Conceptualization

Here we return back to the naming. The idea behind the previous section about ICM was to interconnect the ICM with naming since these two phenomena work closely together. In the following section, we will be describing the onomasiological model in general, while also focusing on the names based on the sound. Through these names that chose sound as the part of the ICM on which the name is based, we will be describing the possible ways in which the sound gets coded into language.

3.3.1 Part(s) of ICM for ICM (metonymy)

Metonymy (from Greek *metōnymia*, “change of name”) is a device used to replace an original object or idea with another that has some kind of association to them. In this thesis, metonymy is seen as a process that, during the act of naming, grants us mental access to the named entity, which corresponds with Kövecses and Radden’s (1998:39) definition: "Metonymy is a cognitive process in which one conceptual entity, the vehicle, provides mental access to another conceptual entity, the target, within the same domain or ICM." This phenomena is further explained by Radden and Panther’s (2004) description of the

[3] for *tom* "small"; bit=small (Desfayes, 1998)

motivational process in naming on the example of *screwdriver*. They say that "…the following conceptual steps can be identified in the motivational process. First, there is the tool screwdriver that has to be named. This tool is associated with a complex ICM (source), which provides the basis for naming the thing (target). Second, guided by language-independent factors such as salience, economy, and metonymy, only certain components of the complex ICM get selected and named by a given speech community. The coding of these salient parts is sufficient to evoke the whole ICM by means of a PART FOR WHOLE metonymy." (Radden & Panther, 2004:8).

3.3.1.1 Direct expression of the part of ICM

The first level on which sound is coded into language is realised by direct naming of different sounds. Result of this process is a certain structure, that can stay as it is and form a name or it can be further conceptualised into more complex names. In this section we will be concerned with names that did not undergo further conceptualisation.

We name the sound with a specific lexical word, which is in our case a verb that entails the qualities of the sound in its definition. Verbs in this section all have an onomatopoeic origin, so there is a gradient between these verbs and onomatopoeia. The main difference between them is the fact that purely onomatopoeic names have no lexical meaning, and their only purpose is to imitate the perceived sound. In contrast, these verbs with onomatopoeic origin have become lexical, in this way they have a great descriptive value when used to describe sounds, as they combine imitation of the sound with the specific features of the sound that can be found in their lexical meaning.

Verbs used to name sounds entail specific qualities which the sound needs to meet to be assigned with such a verb. Among all the qualities that were specified in the definition of the collected verbs, the most prominent features were length, pitch, and loudness of the sound. It fits well as these are the qualities that are very easily recognizable even by an untrained ear and we can presume that names given to the birds were rarely if ever coined by musically trained people. This is also closely connected to saliency. As mentioned in the section about ICM, those features that have the most salient value, meaning they are the first

thing a person notices when experiencing a new object, get chosen to describe the object. Length, pitch, and loudness are indeed the most salient features of a sound.

Verbs collected from our sample were of two categories. The first category were verbs whose main definition did not specify the producer of the sound. The second category of verbs was where their definition, main or secondary, specified the producer of the sound to be a bird, and their primary use was connected to the description of bird sounds in particular. We can have a look at prime examples from both of these categories: the main definition of *scream*, as the first category verb, is *to give a loud, high shout, because you are hurt, frightened, excited, etc* (OALD). Contrarily, the only definition of *cheep* is *(of young birds) to make short high sounds* (OALD). The third category were those verbs that specified that the producer of the sound was something other than a bird, or when the sound described was not natural to birds, meaning that the use of these verbs was metaphorical. We will be concerned with this category of verbs in the section about metaphors. As an example of this distinction, the first category verb *roar* is defined as *to make a very loud, deep sound* (OALD. In contrast to it, the third category verb *bark* is defined as *bark (at somebody/something) when a dog barks, it makes a short loud sound* (OALD).

Verbs used to name birds that did not specify a producer of the sound in their main definition were as follows: *scream, shriek, roar, screech, hiss, peep, squeak, squeal*, and *shrill*. In Table 2, we can find qualities these verbs entail, to show why a certain verb was assigned to a specific vocalization.

	High	**Loud**	**Short**	**Not loud**	**Long**	**Low**
Scream	+	+	-	-	-	-
Shriek	+	+	-	-	-	-
Screech	+	+	-	-	-	-
Peep	+	-	+	-	-	-
Squeak	+	-	+	+	-	-
Squeal	+	-	-	-	+	-
Shrill	+	+	-	-	-	-
Roar	-	+	-	-	-	+

Table 2: Qualities of the first category verbs

What can be seen in Table 2 is that the most frequent entailed feature in the verbs' definitions was the highness of sound.

The verbs that had the least cases among the names were the verbs *scream, squeal shrill,* and *roar.* Here are the names they appeared in: *screamer, long-winged screamer; squealer, jack squealer; shrill-cock; roarer.*

The cases of other more frequent general verbs are listed in Table 3.

Shriek	**Screech**	**Squeak**	**Peep**
woodshrike	omscreech	squeak	peep
masked shrike	holm-screech	squeaker	peep lark
woodchat shrike	screech cock	devil-squeak	moor peep
shrieker	screechy cock	devil-squeaker	heather peep
shriek-owl	screech-drostle	squeak-thrush	heather peeper
red-backed shrike	screech bird	squeaking-thrush	heath peap
lesser grey shrike	screech thrush		
sentinel shrike	screech-devil		
flusher-shrike	devil-screecher		
shrike	screech swallow		
shrike bird	screech martin		
great grey shrike	screech-jack		
shriek cock	screech		
shrike-pie	screech-owl		
shriek	screecher		

Table 3: Names using the particular general verbs

What is apparent from Table 3 that the two most frequent general verbs used in bird naming were the verbs *shriek* and *screech.*

Verbs with the same main qualities are *scream, shriek, screech,* and *shrill*. They can be diversified by more specific qualities their definition entails. In Table 4, we can look at the specific qualities that these verbs entail, which enables us to draw a difference between them.

	Loud	High	Unpleasant	Sound	Cry
Scream	+	+	-	+	-
Shriek	+	+	+	+	-
Shrill	+	+	+	+	-
Screech	+	+	+	-	+

Table 4: More specific qualities of verbs with the same main features

What is apparent from Table 4 is that the two most frequent features of the sound entailed in the verbs' lexical definitions were highness and loudness of the sound.

Scream (to make a loud, high noise, OALD) is the base point as it is, by definition, only loud and high. *Shriek* (to make a loud high unpleasant sound, OALD) and *shrill* (to make an unpleasant high loud sound, OALD) are synonymous as their common differentiation from *scream* is, that the sound they describe must be also unpleasant. *Screech* (to utter a loud sharp shrill cry, OALD) is synonymous with shriek *and* shrill, the only difference being that the words used in its definition are more complex. Instead of being described as a sound, it is described as a cry.

The remaining verb that did entail no qualities to be described is the verb "hiss". Definition of "hiss" is *to make a sound like a long 's'* (OALD). This is a special case as there is an exact correspondence between the phonetic structure of the verb and the sound it imitates. The phonetic structure of the rest of the verbs in this section corresponds with the sound imitated only approximately.

So, although this verb having a lexical meaning, it is closer to the onomatopoeia on the imaginary gradient than the rest of these verbs, which are closer towards the lexical meaning.

The second category of verbs were those, that had a bird directly in their definition of the meaning. Those verbs were as follows: *wheetle, chatter, chit/chitter, chirp, cheep, squawk*, and *churr*. Here we could make the distinction between those that have a bird in their main definition and those that have a bird only in the definitions of their secondary meaning. Those with a bird in the main meaning definition are: *churr, cheep, chirp, squawk,*

and *wheetle*. We can take a look at the qualities described in the definitions of these verbs in Table 5.

	High	**Young bird**	**Bird in general**	**Short**	**Low**	**Loud**	**Also Insect**
Wheetle	+	+	-	-	-	-	-
Chirp	+	+	-	+	-	-	+
Chit/Chitter	+	-	+	+	-	-	-
Cheep	+	+	-	+	-	-	-
Squawk	+	-	+	-	-	+	-
Churr	-	-	+	-	+	-	-

Table 5: Qualities of verbs with a bird in their main definition

What is apparent from Table 5 is that the highness of the sound was the most frequent feature of these bird-related verbs.

The least frequent bird related verbs were the verbs *squawk, churr,* and *wheetle.* Here are the names they appeared in: *churr, churr-muffit; squawking-thrush; wheetle.* The cases of other more frequent bird-related verbs are listed in Table 6.

Chit/chitter	Cheep	Chirp
furze chitter	cheeper	furzechirper
chitterchat	cheeping lark	grasshopper-chirper
chitterling	moss cheep	cricket chirper
long-tailed chittering	moss cheeper	cherry-chirper
chit	heather cheeper	
chitty	grey cheeper	
chitlark	cheepart	
chittyprat	cheeping lark	
chittie		
chitty-whitethroat		

Table 1: Names using the particular bird-related verbs

What is apparent from Table 6 is that the verb *chit* or *chitter* was the most frequent.

What is interesting with these second category verbs is that when the verb specified the sound being produced by a young bird, it was also always specified that the sound was high. There is again a biological reason for this. Offspring in general, not only those of birds, produce higher sounds than adults in order to draw attention to themselves in the case they are in distress or danger since higher sounds are more likely to be noticed. There is a clear distinction between these verbs stemming from their definitions.

The only verb from this category that had the bird only in its second definition is the verb *chatter* (of birds or monkeys; to make a series of short high sounds, OED). Here are the names that include this verb and its abbreviation *chat*: *chatterjack, chatterpie, chattermag, waxen chatterer, stonechatter, furze chatter, chatter-hen, woodchat shrike, stone chat, wall chat, fallow chat, gorse-chat, bushchat, whinchat, grass-chat, haychat,* and *fire-eyed chat.*

All of the verbs from this section also have a strong onomatopoeic value and would be somewhere between the first category of verbs and the verb *hiss* on the imaginary gradient. This can be demonstrated in the example of *cheep, wheetle,* and *churr*. We can hear the height of the sound when we pronounce *cheep* /tʃiːp/ and *wheetle* /wi:tl/ and the lowness of the sound when *churr* /tʃɜː(r)/ is pronounced. We will look into this more in the section about onomatopoeia.

3.3.1.2 Processing of the part of ICM through the phonological system

Another way sound can be coded in language is by using onomatopoeia. The main idea of onomatopoeia is that the sound is imitated with the usage of similar speech sounds (phonemes) to the sound perceived. The problem is that there are only up to a hundred speech sounds available that can be used to imitate an infinite number of nature sounds (Tsur, 2001:1). This means that there need to be compromises when coding sound into language. The speech sounds can mostly imitate the most salient features of a sound, but they cannot convey all the other delicate aspects of the sound.

What is different from the direct naming with verbs is that in the case of direct naming with an onomatopoeic word, the word carries no lexical meaning, and the quality of a sound is coded only in its phonetic structure, and although there is a type of onomatopoeia that uses lexical words, the meaning of those words is irrelevant, and they are only used for their phonetic structure - instead of assembling phonemes into new words, we take existing words with similar phonemes to the sound we want to express in language, and we combine them together. This is the main difference from the verbs used as a direct naming since they carry the quality of a sound mainly in their lexical meaning, and only an indication of the sound is coded in their phonetic structure, having an onomatopoeic origin.

From an onomatopoeic point of view, phonemes can create specific combinations that can be associated with a particular meaning, these combinations are called *phonesthemes* (Körtvélyessy, 2019:5). As an example, the combination /*br*/at the beginning of a word is connected to an unpleasant sound. This can be seen in the words *brack*, *brawl*, and brash

(Marchand 1969:323). Let us now have a look at the structure of a syllable and the two main distinct groups of phonemes- vowels and consonants.

A syllable is generally formed from three parts - onset, nucleus, and coda. Onset and coda are always created by a greater air obstruction and therefore are always formed by one or more consonants. Nucleus, on the other hand, is formed by no or very little obstruction and is therefore formed by vowels. A syllable can also end in a vowel, in this case, we refer to it as an open syllable, like in the word *you* /ju:/. All other syllables that end with a coda are referred to as closed syllables. A minimal syllable is formed by only one phoneme, like in the word *are* /a:/. (Skandera & Burleigh, 2005:65). According to Skandera and Burleigh (2005:31) "…vowels are produced without any obstruction of air…" and "They carry most of the loudness, pitch, and tone of voice…", this means that they convey most of the onomatopoeic value. If we take a look at the IPA vowel chart in Figure 1, we can see the position of the particular vowels. Close vowels, which are positioned at the top of the chart, are generally used to express high tones, on the contrary, open vowels, which are positioned at the bottom of the chart, are used to express low tones.

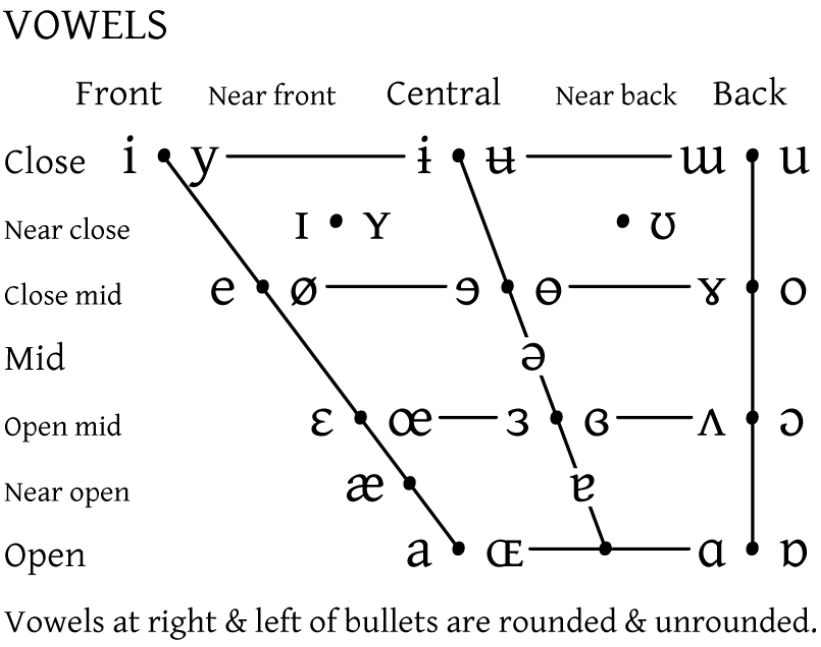

Figure 1: IPA vowel chart, 2005

Here we can compare the onomatopoeic structure (focusing on the vowels) of the verbs from the previous section with their lexical meaning. If we take a look at all the verbs that had in their definition the quality of highness - *shrill, cheep, chirp, squawk, wheetle, scream, shriek, screech, peep, squeak, and squeal,* we can see that almost all of their vowels are also used to express highness of a tone, them being vowels of /i/ and /i:/. The only exceptions being the verbs *squawk* and *chirp* since their vowels are /ɔ:/ and /ɜ:/ that are generally used to express low notes. If we take a look at both of the verbs that had in their definition the quality of lowness – *churr and roar*, we will see that their vowels /ɜ:/ and /ɔ:/ are used to express low notes and are in accordance with their lexical definition. The conclusion of this experiment is that the onomatopoeic structure of lexical verbs with an onomatopoeic origin is in the majority in agreement with their lexical meaning.

We divided the onomatopoeic names into two categories. The first category consisted of simple monosyllabic onomatopoeic names, that also had no lexical meaning. The second category consisted of onomatopoeic structures that used combinations of the first category words or a combination of lexical words to imitate a more complex sound. We can look at the distinction in the following examples. An example of the first category of onomatopoeic name is the name for *Corvus corone – craa.* Its phonetic structure /kra:/ imitates the sound of the bird. Examples of the second category of naming are the names for *Phylloscopus collybitus- chiffchaff* and *choice-and-cheap*. The name c*hiffchaff* uses basic onomatopoeic structures and combines them into a more complex structure. The name *choice-and-cheap* uses lexical words whose phonetic structures resemble the sound the closest and combines them into an onomatopoeic structure. Hyphens are frequent in these structures as they insinuate the unity and continuity of the sound.

In our sample, names from the first category of onomatopoeic naming were as follows: *pee bird, pea bird, weet bird, peel-bird, peet-bird, cra, craa, creak, craa, craa, cra, daw, da, twitlark, twitty lark, twitty bird, sea-chip, gluck jug, whaup, nope, roondoo, spink, chink,* and *chinky.*

We can look at the frequency and the position of the individual consonants in Table 7.

Pre-initial		Initial		Post-initial	
s	5	k	9	r	10
		p	4		
		w	4		
		t	3		
		d	3		
		tʃ	3		
		ʃ	2		
		l	1		
		g	1		
		n	1		
		dʒ	1		
		r	1		

Table 7: Frequency and position of particular consonants in the onset

What can be seen in Table 7 is that the consonant /r/ was most frequent.

As mentioned before, consonants are formed by some type of air obstruction and can thus appear only in the onset or coda of a syllable. If we look at their positions, we will find that the consonant /r/ appears mostly in the post-initial position, whereas the consonants /k/ and /p/ appear in both initial and terminal positions.

Here we can look at the phonemes and phonesthemes these consonants create, and at the particular meaning connected to them.

Phoneme /k/ in the initial position is often found in words describing vocal sounds (Marchand 1969:325). This might be the reason for the quantity of this phoneme in the onset of words connected to bird vocalization.

Phoneme /p/ at the beginning of a word is expressive of explosive sounds (Marchand 1969:321). This is the case with the names *pee bird, pea bird, peel-bird, and peet-bird.* In these names, the phoneme /p/ in the initial positions suggests the quick start of the perceived sounds.

For both of the phonemes /k/ and /p/ is typical, according to Marchand (1969:314), that they "at the end of a monosyllabic word and preceded by a short vowel are expressive of a quick, abrupt, short-stopping and explosive noises…" Marchand uses the words *clack,*

knock, tick, tap, and *snap* as examples of these words. In our sample examples of such words were the names *chink, spink, nope, whaup, gluck, and sea-chip*. This is how the sudden end of the sounds produced by these birds was coded into language.

For the consonant /r/ is characteristic, as reported by Marchand (1969:315), that it "in the middle or at the end of a word imitates or symbolizes continuously vibrating sounds." Although of a lesser frequency than that of the /z/ consonant. He introduces the words *croak, chirp, snore, snort,* and *purr a*s the example of these words. Words from our sample with /r/ in the middle of them are *skriker, shreek, screeck, screek, cra, craa, and creak*.

Marchand (1969:325) describes that phonestheme /kr/ "introduces words denoting jarring, harsh or grating sounds …" He gives the words *crack, creak, crackle, crump,* and *crunch* as examples of those words. In our sample, names starting with this phonestheme were as follows: *cra, craa,* and *creak.* All of them were names for birds from the Corvus genus, whose vocalization is typically harsh.

Vowels	
i	11
i:	9
a	5
a:	3
u:	2
ɔ:	1
aʊ	1
əʊ	1

Table 8: Frequency of vowels in the first category of onomatopoeic names

In Table 8 we can find all the vowels that could be found in these onomatopoeic names.

What can be seen in Table 8 is that the vowel /i/ was the most frequent one.

The vowels /i/ and /i:/ are used to express the highness of sound as we can see by their position in the vowel chart. The higher the place of the articulation of a vowel the higher is its tone – the highest vowels at the top of the chart and the lowest at the bottom. Vowels

/a/ and /a:/ on the other hand are positioned on the bottom of the chart and are thus sued to express the lowness of a sound.

The second category of onomatopoeic names, unlike the first one, could be analysed from the perspective of syllables. We can find all the onomatopoeic names from the second category sorted by the number of syllables in Table 9.

Two syllables	Three syllables	Four syllables	Five syllables	Six syllables
goo-back	wet-my-feet	col-candle-wick	coal-and-candle-light	little-bread-and-no-cheese
swap-hats	wet-my-lips	south-southerly	bull-of-the-mire	
top-pot	but-for-but	bull o'Prestwick	chitterareery	
squaw-pat	twit-me-dick	pooly-wooly		
chop-hats	wet-weather	jeremy-joy		
come-back	choice-and-cheap	chitadeedee		
coldie	jack-shewall	little-peewit		
calloo	sit-ye-down	tititiwit		
go-west	chink-chaffey	chitteraragh		
tu-tu	chink-chaudy			
hay-hoe	bread-and-cheese			
hiho	titheree			
heigh-haw				
pay pay				
pee pee				
mick-mick				
carnell				
carner				
gip-gip				
chiffchaff				
chitchat				
twit-twat				
spink-wink				
chink-chink				

Table 9: Number of syllables in the onomatopoeic names from the second category

Table 9 shows the scope of complexity of onomatopoeic names, ranging from disyllabic words to six-syllabic.

Another interesting thing are the patterns of sounds that can get coded into language using onomatopoeia. If we look at the name *chitterareery*, we may notice that there are five distinct syllables, imitating a complex phrase of a bird.

According to Pieplow (2017), there are four basic patterns of bird sounds- *series, trill, phrase*, and *warble*. The first two patterns consist of a series of same notes repeated after each other. The difference between them is that notes in *series* are slow enough to count, whereas notes in *trill* are too fast to be counted individually. The two other patterns of bird sounds- *phrase* and *warble*, consist of unique unrepeated notes, and as was the case with the patterns mentioned before, the distinguishing factor of these two patterns is again the countability of individual notes. In a phrase, we are able to individually count them, whereas in warble we are not. We can see these patterns graphically represented in Figure 2.

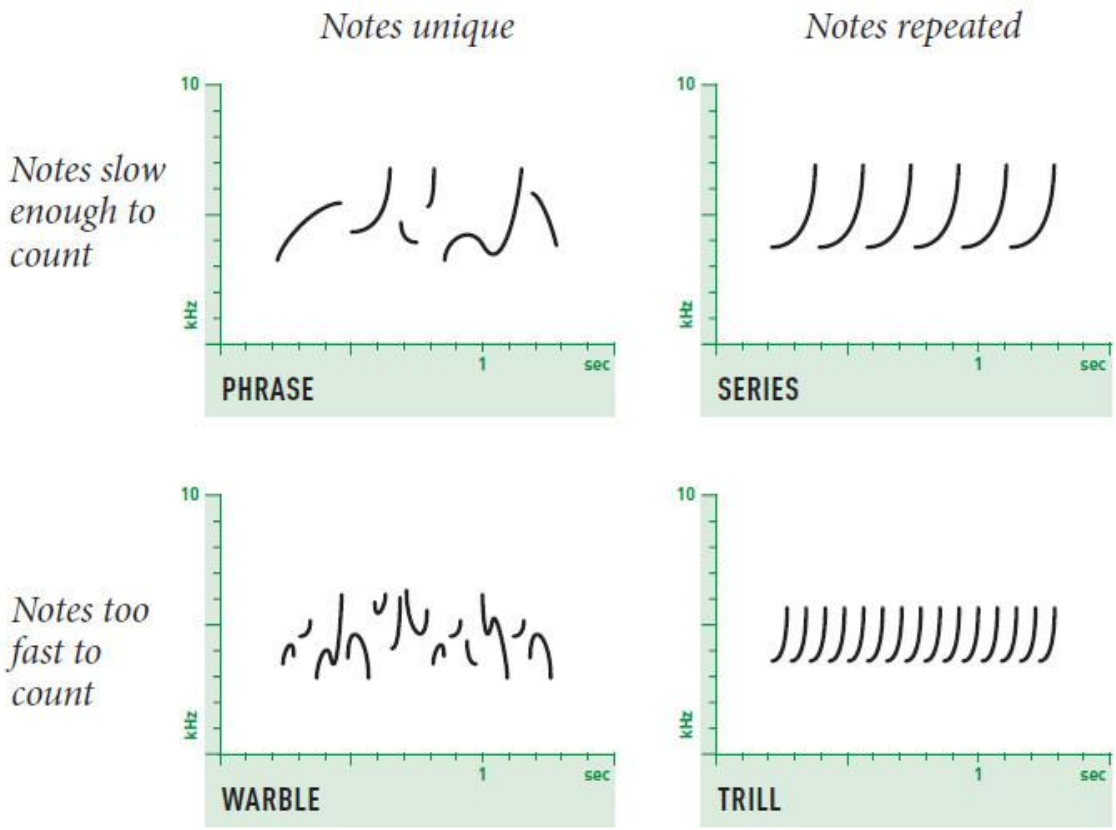

Figure 2- The four basic patterns of bird sounds (Pieplow, 2017)

From this point of view, we could assume that all the names that include only one particular vowel are resembling the repeating of the same note, as vowels are the carriers of particular qualities of a sound. This would mean that this type of names codes the two patterns of a bird vocalization that consist of repeated notes, either a series or a thrill. This could be seen in the names *chink-chink, spink-wink., gip-gip, mick-mick, pee pee, pay pay, tu-tu, top-pot, and tititiwit.* It could be also assumed that very similar vowels like /i/ and /i:/ occurring together in one name would have the same result as can be seen in the name *twit-me-dick.*

It could be safely assumed that the more complex names code the two patterns of bird vocalization that consist of unique notes. Those are the names such as *coal-and-candle-light, bull-of-the-mire, chitterareery,* and *little-bread-and-no-cheese.* These more complex names are often constructed from already lexical words, but in this context, they carry no meaning. They were chosen on the basis of their phonemic and syllabic structure and also on the way how the rhythm and intonation of the whole units pronunciation resembles the perceived sound.

I would also argue that the line between a phrase/warble or a series/trill is whether the name contains less or more than three different vowels. The sound segment from two different vowels is still short enough to be repeated and be perceived as a series or a trill. The segment of a sound with three different vowels is distinct enough to stand out in such a pattern and would be classified as either a phrase or a warble. This is the way the sound pattern is coded in language. From this perspective, we could categorise the names into series and trills, or phrases and warbles. We can find these names sorted according to the patterns in Table 10.

Series and trills	Phrases and warbles
goo-back	wet-my-feet
swap-hats	wet-my-lips
top-pot	wet-weather
squaw-pat	carroner
chop-hats	carner-crow
come-back	carron.crow
coldie	choice-and-cheep
calloo	jack-shewall
go-west	sit-ye-down
tu-tu	bread-and.cheese
hay-hoe	titheree
hiho	col-candle-wick
heigh-haw	south-southerly
pay pay	bull o'Prestwick
pee pee	Jeremy-joy
mick-mick	chitadeedee
carnell	little-peewit
carner	chitteragh
gip-gip	coal-and-candle-light
chiffchaff	bull-of-the-mire
chitchat	chitterareery
twit-twat	little-bread-and-no-cheese
spink-wink	
chink-chink	
but-for-but	
twit-me-dick	
wet-weather	
chink-chaffey	
chink-chaudy	
pooly-wooly	
tititiwit	

Table 10: Names sorted into series and trills, and phrases and warbles

What can be seen in Table 10 is that *series* and *trill* patterns were more frequent.

3.3.1.3 Further conceptualisation

Now we get to the names that absolved further conceptualisation, be it by metaphor or by subsequent metonymies. Sound in the names from the previous sections was coded directly either by naming the sound with a lexical verb or by imitation through phonetic system of language. Names in the following sections resulted from certain mental process.

3.3.1.3.1 Metaphor

In this section, we will be concerned with names that make use of a metaphor to code a sound into language.

As a starting point, we used the theory of *Image metaphor*, introduced by George Lakoff. Lakoff (1987) describes image metaphor as a subtype of metaphors that takes prototypical mental images and projects them onto new mental images with a similar internal structure.

To give an example Lakoff (1987:219 quotes Andre Breton: *My wife… whose waist is an hourglass*. Here we have an example of an image metaphor where the mental image of the shape of an hourglass is projected on the mental image of the woman's waist, giving it the notion of slimness. This theory is described on literal images perceived in the mind of a person. He also calls attention to important ways in which is image metaphor distinguished from a general conceptual metaphor (e.g., LIFE IS A ROAD), here he refers to image metaphor as a "one-shot mapping":

"One-shot mappings, as their name implies, are not used over and over again; that is, they are not conventionalized. They are not used in everyday reasoning. There is no system of words and idiomatic expressions in the language whose meaning is based on them. They map image structure instead of propositional structure. They are not used to understand the abstract in terms of the concrete. They do not have a basis in experience and commonplace knowledge that determines what gets mapped onto what (Lakoff, 1987)."

Ureña & Faber (2010:125) then draw distinctions between image schema and mental image, pointing out that image schemas are an unsaturated form of imagery and they arrive

in the mind unintentionally, meaning "… they do not participate in the conscious act of perceiving." In contrast, mental images are intentional, meaning they are a product of a deliberate cognitive process. They are also more saturated versions of mental representation and since "the notion of 'mental image' is admittedly rather vague", they are not restricted only to the sense of vision but can also refer to other sensory stimulations. They also represent our perceptual awareness (Ureña & Faber, 2010). This definition allows us to use the image metaphor on auditory mental images, while the Lakoff's definition specified that the image metaphor is only visual.

For our purpose, we will use image metaphors with auditory perception where we have prototypical sounds in our mind, and we project them onto new sounds with similar features. As an example, the sound of *Anser albifrons* is similar to the prototypical sound of laughing, with its short and repeating segments resembling the "*ha ha ha ha ha"* sound of a prototypical laugh. Therefore, *Anser albifrons* was given the name *laughing goose*.

In this section we will be concerned with the most basic metaphorical names that only make use of a metaphor on the produced sound, meaning the perceived sound is likened to a prototypical sound after which the bird is then named. All these names were sorted into categories according to the semantic area the metaphor came from. There were three main sources: human sounds, animal sounds and non-vocal sounds. We can find all the names sorted according to this criterion in Table 11.

Human sounds	Animal sounds	Non-vocal sounds
laughing bird	blackcap mew	buzzer
pealthroat	barker	sputter
hedge-chanter	purrin bird	crackle
arabian babbler	nicker	rattle-thrush
talking jack		
cry-baby		
musical wailer		
diddle		
whistling thrush		
whistler		
whistle-wing		
singing titlark		
nettle-singer		

Table 11: The first group of metaphorical names sorted by the semantic area of the metaphor

What is apparent from Table 11 is that the metaphors of human sounds were the most frequent.

One group of names from the category of human sounds made use of the metaphor on human laughter. In the names, it was mostly realised by the adjective *laughing* followed by a name of a bird as seen in these names: *laughing goose, laughing gull, laughing-owl, laughing dove, laughing bird,* and *laughing-betsy.* One instance of a name made use of a more specific expression for laughing sound via the verb *to peal (to suddenly laugh loudly, OED),* as seen in the name *pealthroat.*

Another group of names from the category of human sounds made use of the metaphor of human whistling. In the names this was realised by the adjective *whistling* with a specification of a bird as can be seen in the names *whistling thrush, whistling swan, whistling duck, whistling dovyer, whistling plover*, and *whistling sandpiper*. Other names were realised by the nominalisation of the verb *whistle* as can be seen in the names *whistler* and *seven-whistler.* Further, this metaphor was also realised by the use of the word *whistle*. This can be seen in the names *whistle-wing, ring-whistle,* and *whistle of the waste*.

Another group of names from the category of human sounds made use of metaphor on the sound of human talk. This was realised in the names mostly by the nominalised verb

to babble as seen in the names *arabian babbler, common babbler,* and *fulvous babbler*. This particular verb was used to give the notion of the incomprehensibility of the metaphorical conversation. A similar case was the verb *to diddle (to sing without the distinct utterance of words),* coding a very similar sound, the difference here is the sound being more melodic. The name *hedge-chanter* realised this metaphor via the nominalised verb *to chant*, giving the sound increased notion of loudness. The name *talking jack* realised this metaphor in the most direct way by the use of the adjective *talking.*

The last group of names from the category of human sounds made use of the metaphor of human crying. It was realised by the compounds containing the noun cry and the noun baby, more likening the sound to the sound of a crying child rather than a crying adult. This can be seen in the names *cry-baby* and *cry-baby bunting.* It was also realised by the nominalised verb *to wail* with the adjective *musical,* specifying the melodicity of the sound.

Non-vocal sounds were realised by the nominalisation of verbs describing the sounds. Such was the case with names *buzzer, sputter, crackle,* and *rattle.*

For names from the category of metaphor on animal sounds, the three source sounds were the sounds of a cat, a dog, and a horse. In the names, it was realised by nominalization of the verbs describing these sounds as in the names *blackcap mew, barker, nicker, jay-nicker, and jack nicker.* One name made use of an adjective followed by the word bird- *purrin bird,* suggesting the bird to be the producer of the cat-like sound.

3.3.1.3.2 Metaphor and subsequent metonymy

Here the mental process gets more complex as in addition to metaphor, a metonymic process is employed. First section is concerned with single subsequent metonymy, whereas the second section analyses very complex metonymical chains that result into names.

3.3.1.3.2.1 Subsequent single metonymy

Another more complex group of metaphorical names made use of a subsequent metonymy in addition to the metaphor on the produced sound as was the case with the first

group of metaphorical names. This means that the sound is at first likened to a sound, which is then subsequently metonymically substituted.

We will look at the progression in the following example. A similar sound is coded in these two names- *barker* and *chinting-hound.* The name *barker* belongs to the group of metaphorical names that use a metaphor on the sound itself. In the case of the name *chinting-hound*, the sound is in addition metonymically expressed by the producer of the metaphorical sound- PRODUCER FOR PRODUCED, meaning that instead of *barking* we use the producer of it- the *hound.* In conclusion, these two names express the same or similar sound, but in the latter case, the sound is coded into language in a more complex way. Another example of a different metonymy can be seen in the name *stonesmack* where the metaphorical sound is a result of an activity rather than being produced by a producer- ACTIVITY FOR EFFECT metonymy. A different example of another metonymy can be found in the name *drum* since a drum cannot produce a sound on its own- it needs someone to play it, meaning the drum cannot be classified as a producer of the sound. This type of metonymy could be called INSTRUMENT FOR SOUND PRODUCED. Names in this category were sorted according to the type of included metonymy. We can find all the names sorted in Table 12.

PRODUCER FOR PRODUCED	ACTIVITY FOR EFFECT	INSTRUMENT FOR PRODUCED SOUND
cricket-teal	clickstone	bog-drum
cricket-bird	stoneclick	drummer
grasshopper-wren	stonesmack	moor-drum
grasshopper-lark	stoneclatter	drum
grasshopper warbler	wood tapper	bell-bird
grasshopper-chirper	little wood-tapper	bell-ringer
sky goat	nut-tapper	trumpeter finch
god's goat	tapper	
air goat	tapperer	
airy goat	stonepecker	
moorlamb		
summer lamb		
evening goat		
little goat of the night		
kid of the air		
kid of the spring		
cat-gull		
kitty		
kitty-hearn		
horsegok		
horse-cock		
snake bird		
rattlesnake-bird		
chinting-hound		
monkey owl		
creak-mouse		
nightingale’s friend		
god almighty's scholar		
jester-bird		
market jew crow		
minstrel of the seashore		

Table 12: The second group of metaphorical names sorted by the type of metonymy

What is apparent from Table 12 is that the PRODUCER FOR PRODUCED metonymy was the most frequent.

One set of the names from the second group of metaphorical names had PRODUCER FOR PRODUCED metonymy. The majority of the names consisted of metaphors on a goat or a sheep, and since these two animals produce the same sound, we could consider them interchangeable. In the names, the metaphor was realised by usage of the names of these animals, or of their babies- words such as *goat, lamb,* and *kid.* This can be seen in the names *sky goat, god's goat, air goat, airy goat, moorlamb, summer lamb, evening goat, little goat of the night, kid of the air,* and *kid of the spring.* If we analyse these particular names further, we will notice that some of them are pointed towards a bird ICM by the metaphorical things that are above people, be it *sky, air, airy, of the air,* or the most complex metaphor of them- *god's.* This can be seen in the names *god's goat, sky goat, air goat,* and *airy goat.*

Some of the names were metaphors of insects, more specifically a cricket and a grasshopper. This was realised in the names by the name of the insect followed by a bird specification as *teal, lark, wren, warbler, chirper, or bird.* This can be seen in the names *cricket-teal, cricket-bird, grasshopper-wren, grasshopper-chirper, grasshopper warbler,* and *grasshopper-lark.* This metaphor is not unexpected as these animals are mostly known for their typical sound, so their appearing in names motivated by sound is more than fitting.

Another group of names likened the perceived sound to the sound of cats. This was realised in the names by the words *cat* and *kitty* as can be seen in the names *kitty, cat-gull,* and *kitty-hearn.*

Two names made use of metaphor on horses. This was realised in the names by the name of the animal- *horse,* as can be seen in the names *horsegok* and *horse-cock.*

Another two names made use of metaphor on snakes. In the names, it was realised by the general name of the animal- *snake,* or by name of a specific kind of a snake- *rattlesnake.* This can be seen in the names *snake bird* and *rattlesnake-bird.*

The name *monkey owl* made use of metaphor on the sounds produced by monkeys; in the name, it was simply realised by the word *monkey* before the bird.

The name *creak-mouse* metaphorically likened the perceived sound to the sound of mice.

Another set of names were metaphors of humans. What is interesting here is that unlike the metaphors on animals, where the produced sound is very prototypical and not reliant on the context (the sound produced by a goat is always relatively the same[4]), metaphors on humans are heavily dependent on the context, as humans do not have a prototypical sound like other animals. The metaphorical sound acquires its qualities from the context. The name *jester-bird* uses the word *jester* to code the sound. From the context, we can assume that the sound coded is the sound of laughter as it is a typical thing for a jester. From the context of the name *minstrel of a seashore*, we can assume the melodicity of the coded sound as a minstrel was someone who played music and sang songs in the Middle Ages. The context of the name *god almighty's scholar* could suggest the monotony of the sound as of the speech of a scholar. The context of the name *market jew crow* metaphorically suggests the coded sound to sound like a loud talking or arguing.

The most frequent source sound of the metaphor for the names with ACTIVITY FOR EFFECT metonymy was the sound of tapping. The general sound of tapping was realised by the nominalised verb *to tap* in the names *tapper* and *tapperer.* The tapping was further diversified by the type of material the sound of the tapping can be produced on, specifying the sound further since tapping on stone produces a dull low sound whereas tapping on wood produces sharper sounds. The sound of tapping on wood was realised in the names by compounds such as *wood tapper, little wood-tapper,* and *nut-tapper,* and the sound of tapping on stone by the compounds in the names *clickstone, stoneclatter, stoneclick,* and *stonesmack*

In the category INSTRUMENT FOR SOUND PRODUCED metonymy were names connected to *a drum,* implying lowness and shortness of the coded sound. Other instruments included in metonymical names were *a bell* and *a trumpet* in the names *bell-bird* and *trumpeter finch.*

3.3.1.3.2.2 Metaphor and subsequent metonymic chain

The last and most complex category of bird names uses, in addition to the metaphor a chain of metonymies. In this section, we will go over all the names from this category and describe the metonymical chain behind them.

[4]The only instance I can think of where the sound can noticeably change is when the animal is in pain.

We will start with explaining the process behind the name *deadchick* as a prime example. First, we hear the sound of the bird and we metaphorically liken it to the sound of *moaning*. Then we look for an ICM *moaning* is a part of, we choose the ICM of dying and we use the metonymy WHOLE ICM FOR PART OF ICM, so from *moaning* we advance to the word *dying.* The final step is the metonymy RESULT FOR PROCESS after which we end up with the word *dead* that represents the perceived sound. We can find this process graphically represented in figure 3.

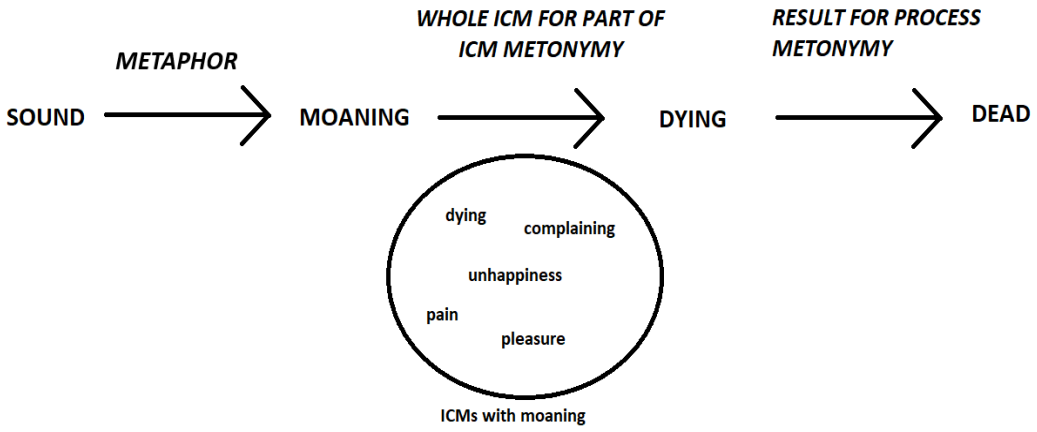

Figure 4: Mental process resulting in the name deadchick

As you can see the process is quite complex. We can use this image as an inspiration when analysing the processes behind the rest of the names.

These are the names that were included in this category: *sawfiler, sidder grinder, saw-sharpener, sawfinch, saw-whetter, saw-whet, sharpsaw, sharpie, jacksaw, tinker, deadchick, tinker-tinker, nut-cracker, jerry spinner, spinner, spinning jenny, flax-spinning-wheel, wheelbird, razor grinder, razor grinder, scissors grinder, reelbird, mowing-machine bird* and *gabbleratchet.*

Let us start with a set of names that use the ICM of a spinning wheel. These names are *jerry spinner, spinner, spinning jenny, flax-spinning-wheel,* and *wheelbird.*

The first name of this category is the name *spinner.* We start with the sound that is metaphorically likened to the sound of creaking. We then search for ICM containing creaking and then use WHOLE ICM FOR PART OF ICM metonymy- we get the device *spinning wheel*. Then we use OPERATOR FOR DEVICE metonymy, and we finally end up with the name *spinner* coding the perceived sound. The same process is also relevant for the name *jerry spinner*.

Another name from this set is the name *spinning jenny.* The process behind this name differs only in the last step from the process behind the name *spinner*. As with all the cases, we start with the sound that is metaphorically likened to the sound of creaking. We then search for ICM containing creaking and use WHOLE ICM FOR PART OF ICM metonymy- here we get the device *spinning wheel*. Next, we perform ACTIVITY FOR DEVICE metonymy, and we end up on the word *spinning* coding the perceived sound.

The next name from this set that we will analyse is the name *flax-spinning-wheel.* We start with the sound that is metaphorically likened to the sound of creaking. We then search for ICM containing creaking and then use WHOLE ICM FOR PART OF ICM metonymy- we get the device *spinning wheel*. Then we use TYPE OF DEVICE FOR DEVICE metonymy, and we end up with the name *flax-spinning-wheel* coding the perceived sound.

The last name from this set is the name *wheelbird.* We start with the sound that is metaphorically likened to the sound of creaking. We then search for ICM containing creaking and then use WHOLE ICM FOR PART OF ICM metonymy- we get the device *spinning wheel*. Then we use PART OF DEVICE FOR DEVICE metonymy, and we end up with the word *wheel* coding the perceived sound.

Following set of names to analyse consists of the names *saw-sharpener, sawfinch, saw-whetter, saw-whet, sawfiler, sharpsaw, sharpie,* and *jacksaw*. All these names except *jacksaw* and *sawfinch* use the ICM of sharpening.

We will start with the name *jacksaw*. We perceive a sound, and we metaphorically liken it to the sound of creaking. We then look for ICM including creaking and we perform WHOLE ICM FOR PART OF ICM metonymy and we end up with the word *sawing*. Finally, we perform DEVICE FOR ACTIVITY metonymy, and we end up with the word *saw* coding the perceived sound, this process is also applicable for the name *sawfinch.*

Next is the name *sharpsaw.* We start with a sound; then we metaphorically liken it to the sound of scratching. Then we look for ICM containing scratching and we perform WHOLE ICM FOR PART OF ICM metonymy- ending up with the word *sharpening.* After that we perform PURPOSE FOR ACTIVITY metonymy and SUBJECT OF ACTIVITY FOR ACTIVITY metonymy, and we end up with the name *sharpsaw* coding the perceived sound. We can use this process as a template for all the names including variation of the word *sharp.*

The name *sharpie* shares a very similar process. We start with a sound; we then metaphorically liken it to the sound of scratching. We then look for ICM containing scratching and we perform WHOLE ICM FOR PART OF ICM metonymy- ending up with the word *sharpening.* After that we perform PURPOSE FOR ACTIVITY metonymy, and we have the word *sharp.* Next, we nominalise it and we end up with the name *sharpie* coding the perceived sound.

In the process behind the name *saw-sharpener*, we again start with a sound; we then metaphorically liken it to the sound of scratching. We then look for ICM containing scratching and we perform WHOLE ICM FOR PART OF ICM metonymy- ending up with the word *sharpening.* After that we perform SUBJECT OF ACTIVITY FOR ACTIVITY and DOER OF THE ACTIVITY FOR ACTIVITY metonymies and we finally get the name *saw-sharpener* coding the perceived sound.

Now let us analyse the name *saw-whet.* We start with a sound; we then metaphorically liken it to the sound of scratching. We then look for ICM containing scratching and we perform WHOLE ICM FOR PART OF ICM metonymy- ending up with the word *sharpening.* Here we perform SUBJECT OF ACTIVITY FOR ACTIVITY and METHOD

FOR ACTIVITY metonymies and we end up with the name *saw-whet* coding the perceived sound.

Next to analyse is the name *saw-whetter.* It is very similar to the process behind the name *saw-whet,* with one additional step. We start with a sound; we then metaphorically liken it to the sound of scratching. We then look for ICM containing scratching and we perform WHOLE ICM FOR PART OF ICM metonymy- ending up with the word *sharpening.* Here we perform SUBJECT OF ACTIVITY FOR ACTIVITY and METHOD FOR ACTIVITY metonymies. We end up with the words *saw and whet*. Finally, we perform AGENT OF THE ACTIVITY FOR ACTIVITY metonymy, and we arrive at the name *saw-whetter* coding the perceived sound.

The process behind the name *sawfiler* is the same as the process behind the name *saw-whetter,* the difference is in the method of the sharpening being different. We start with a sound; we then metaphorically liken it to the sound of scratching. We then look for ICM containing scratching and we perform WHOLE ICM FOR PART OF ICM metonymy- ending up with the word *sharpening.* Here we perform SUBJECT OF ACTIVITY FOR ACTIVITY and METHOD FOR ACTIVITY metonymies. We end up with the words *saw and file*. Finally, we perform AGENT OF THE ACTIVITY FOR ACTIVITY metonymy, and we arrive at the name *sawfiler* coding the perceived sound.

Next, we will analyse the set of names that use the ICM of grinding- the names *razor grinder, razzor grinder, sidder*[5] *grinder,* and *scissors grinder.*

We will show the process behind all these names on the name *razor grinder*, as the process is the same for all of them. The difference is that the last metonymy chooses different parts of ICM for each of the names. The process starts with the perceived sound that is metaphorically likened to the sound of scratching. We then look for ICM containing scratching and we perform WHOLE ICM FOR PART OF ICM metonymy- ending up with the word *grinding.* Then we perform OBJECT OF ACTIVITY FOR ACTIVITY and

[5] meaning scissors (Desfayes, 1998)

AGENT OF ACTIVITY FOR ACTIVITY metonymy, and we get *scissors grinder* and *razor grinder* coding the perceived sound.

Another name to analyse is the name *reelbird.* We start with a sound; we then metaphorically liken it to the sound of *rattling.* We then look for ICM containing *rattling,* and we perform WHOLE ICM FOR PART OF ICM metonymy- ending up with the word *spinning.* Here we perform OBJECT OF ACTIVITY FOR ACTIVITY, and we end up with the word *reel* coding the perceived sound.

A very similar process is behind the name *gabbleratchet.* The process starts with a sound that is metaphorically likened to the sound of *rattling*. We then look for ICM containing *rattling,* and we perform WHOLE ICM FOR PART OF ICM metonymy- ending up with the word *spinning.* Here we perform OBJECT OF ACTIVITY FOR ACTIVITY, and we end up with the word *reel* coding the perceived sound. The gabble part of the name is a metaphor that suggests the speech-like quality of the sound. By combining these two parts we get the name *gabbleratchet,* suggesting the coded sound sounds like something between a fast mumbling and the spinning of a reel.

Now let us analyse the process behind the name *nut-cracker*. First, we start with a sound that is metaphorically likened to the sound of *crunching*. We then look for ICM containing *crunching,* and we perform WHOLE ICM FOR PART OF ICM metonymy- ending up with the word *cracking.* Here we perform TYPE OF ACTIVITY FOR ACTIVITY, and we end up with the words *nut-cracking,* now we perform AGENT OF ACTIVITY FOR ACTIVITY, and we end up with the name *nut-cracker* coding the perceived sound.

The next name to analyse is the name *mowing-machine bird.* We start with a sound that is metaphorically likened to the sound of *rattling*. We then look for ICM containing *rumbling,* and we perform WHOLE ICM FOR PART OF ICM metonymy- ending up with the word *machine.* Here we perform TYPE OF OBJECT FOR OBJECT metonymy, and we end up with the word *mowing-machine* coding the perceived sound.

Another name from this category is the name *brake-hopper.* Again, we start with a sound that is metaphorically likened to the sound of *rattling*. We then look for ICM containing *rattling,* and we perform WHOLE ICM FOR PART OF ICM metonymy- ending

up with the words *riding a bike*. Here we perform EFFECT OF ACTIVITY FOR ACTIVITY, and we end up with the words *hopping of a brake*, now we perform AGENT OF ACTIVITY FOR ACTIVITY, and we end up with the name *brake-hopper* coding the perceived sound.

Yet another name to analyse is the name *song-linnet.* We start with a sound; we then metaphorically liken it to the sound of *humming.* We then look for ICM containing *humming,* and we perform WHOLE ICM FOR PART OF ICM metonymy- ending up with the word *singing.* Here we perform OBJECT OF ACTIVITY FOR ACTIVITY, and we end up with the word *song* coding the perceived sound.

The last names to analyse are the names *tinker* and *tinker-tinker*. The process starts with a sound that is metaphorically likened to the sound of *rattling*. We then look for ICM containing *rattling,* and we perform WHOLE ICM FOR PART OF ICM metonymy- ending up with the word *tinkering.* Here we perform AGENT OF ACTIVITY FOR ACTIVITY, and we end up with the word *tinker* coding the perceived sound.

3.4 Examples of how one particular sound is coded in different ways.

In this section, we will look at interesting examples of how the sound got coded in the bird names. We will start with two birds whose names appeared in three of the main categories, to show how a particular sound can get coded into language in different ways.

The first example are the different names for *Charadrius apricarius* that can be found in Table 13.

Charadrius apricarius	
onomatopoeic name	pooly-wooly
metaphoric name	whistling plover
metaphor with single metonymy	musical wailer

Table 13: The names for *Charadrius apricarius* from different categories of the sound coding

In Table 13 we can see the names for *Charadrius apricarius*, sorted according to the complexity of the sound-coding in them. The sound of this bird is on the more basic level onomatopoeically coded as *pooly-wooly.* A more complex name for this bird is in the form of metaphor on the sound *whistling plover*. The most complex of the names for this bird is the name *musical wailer* that makes use of metonymy. Here is one example of how the same sound produced by a bird can be coded in language in very different ways.

The second example are the different names for *Corvus monedula* that can be found in Table 14.

Corvus monedula	
onomatopoeic name	daw
metaphoric name	talking jack
metaphor with single metonymy	market jew crow

Table 14: The names for *Corvus monedula* from different categories of the sound coding

In Table 14, we can see the names for *Corvus monedula*, sorted according to the complexity of the sound-coding in them. The basic onomatopoeic name for this bird is *daw,* imitating the sound with phonemes. A more complex name metaphorically likens the sound to the sound of talking in the name *talking jack.* The most complex of this bird's names is the name *market jew crow*, which on top of the metaphor uses metonymy. This is another example of how the coding of the same sound in language can vary.

An interesting pair of names consists of the name *grasshopper-wren* for *Locustella naevia* and the name *furzechirper* for *Saxicola rubetra*. These two instances of names code very similar sound differently, since the definition of the verb *chirp* specifies that it is the act of producing short high sounds by small birds and insects as well (OALD). This means that this type of sound can be coded by a lexical verb or more complexly using metaphor and metonymy. This particular case can be also found in the pair of the names *monkey-owl* for Tyto alba and *chatter pie* for *Pica pica*. Similarly, in the definition of the verb chatter is specified that it is the act of producing short series of sounds by birds and also by monkeys (OALD). This again means that very similar sounds can be coded by a lexical verb and more complexly by metaphor and metonymy.

Another pair consists of the name *jester-bird* for *Sturnus vulgaris* and the name *laughing dove* for *Streptopelia senegalensis*. These two names again code very similar sound differently. The more basic metaphorical coding of the perceived sound is used in the name *laughing dove*. A similar sound is coded more complexly by the use of metonymy in the name *jester-bird.* This is an example how similar sounds can be coded differently by just a metaphor or by additional metonymy.

3.5 Evaluation

In this section, we will statistically analyse all the bird names in this thesis. The corpus of sound motivated bird names consisted of 340 names. We can find the quantity of names in the particular categories in Table 15.

In total	**Direct naming**	**Onomatopoeia**	**Metaphor with single metonymy**	**Metaphor**	**Metaphor with metonymic chain**
340	125	88	51	48	28
100%	37%	26%	15%	14%	8%

Table 15: Frequency of sound-coding methods

What is apparent from Table 15 is that in majority the simpler the sound-coding was the more names were using it. The only exception was that the names using metaphor with single metonymy were slightly more frequent than the metaphorical names that used objectively simpler coding of sound.

Direct naming using verb amounted to 37% of the total with 125 cases. It was the most frequent way a sound got coded into language. Inside the direct naming 54% of the names, with 68 cases, made use of bird specific verbs, while 46% with 57 cases made use of general verbs.

If we analyse the bird specific verbs, we will notice that the most frequent feature they entail is the highness of the sound. The same case can be noticed when analysing the

general verbs as their most prominent feature across all of them was also the height of the sound, with the loudness being second- as can be seen in Table 3.

This fact is connected to saliency since to be noticed and to stand out from the rest of the sounds in nature, the vocalization must lean towards the extremes- highness (other extreme would-be lowness, as seen in the *roar)* and loudness of the sound. If it got lost in the mix of all of the nature sounds, there would be no name based on it, to begin with. There is also a biological reason for the loudness being the second most prominent feature, as birds generally use their vocalization to lure possible mating partners, so the louder the sound is, the higher chance the bird has of obtaining a partner.

The most frequent general verb in bird names motivated by their vocalization was the verb *screech*; it appeared in 15 names, while the most frequent verb connected to birds was the verb chatter with 19 cases.

Onomatopoeic names amounted to 26% of all the names with 88 cases. Out of those 39 were realised by simple onomatopoeia and 49 by more complex ones.

If we analyse the simple onomatopoeic names from the perspective of their phonetic construction, we may notice that the most frequent vowel in these names was the vowel /i/ closely followed by the vowel /i:/, together amounting to 61% of all the vowels with 20 cases. These two vowels are generally used to express high sounds, as can be noticed from their position in the vowel chart. This means that again, as was the case with direct naming with verbs, the most frequent quality of sound coded in language was its highness.

The most frequent consonant in the onset was the consonant /r/ with 10 cases amounting to 21% of all the consonants. Consonant /k/ was the second most frequent with 9 cases amounting to 19% of the consonants. This statistic is slightly skewed by the fact that many of the simple onomatopoeic names from the corpus were of crows where this particular combination is typical. If crows were left out of the corpus this statistic would be quite different.

If we analyse the more complex names from the point of view of their syllabic structure, we will notice that that the most frequent names were disyllabic. They amounted to 44% of all the more complex onomatopoeic names with 24 cases. The second most frequent were three-syllabic names with 15 cases. This trend of "more syllables, less frequency" continuous throughout the names, where 11 names were four-syllabic, 3 names were five-syllabic, and 1 name was six-syllabic. This is fitting as language always strives to be as economic as possible.

Names with a metaphor and single metonymy amounted to 15% of the total with 51 cases. The most frequent type of metonymy in those names was the PRODUCER FOR PRODUCED metonymy with 33 cases amounting to 67% of the names. This can be contributed to the fact that this type of metonymy can be mostly found in animal-related names, which in this case were the majority. The most frequent animal the metonymy was based on was a goat with 6 cases. This is quite surprising since the sound of goats is not generally considered to be similar to the sound of birds. The second most frequent animal in these names was a grasshopper with 4 cases. This is quite fitting as the sound produced by a grasshopper is almost identical to the trill of a bird.

Purely metaphorical names amounted to 14% with 48 cases. The most frequent source of metaphor was the sound of human whistling with 19 cases. This can be contributed to the melodicity and highness of the majority of bird vocalization. Also, human whistling is resembling of two patterns of bird sounds- a phrase and a warble, where unique notes follow each other in a pattern- just like in the whistling of a human. The second most frequent metaphor was the metaphor on human laughter with 10 cases. This can be attributed to the two other general patterns of bird vocalization- series and trill, where the same short segments of sound are repeated quickly after each other, resembling prototypical human laughter.

Names with metonymic chain amounted to 8% with 28 cases. The overwhelming majority of the sources of the sound were mechanical sounds with 26 cases. The sound of sharpening was the most frequent one, as it was found in 8 names, mostly connected to the sharpening of a saw which occurred in 5 out of those 8 names. The second most frequent mechanical sound was the sound produced by a spinning wheel, which was found in 5 names. The third most frequent mechanical sound was the sound of grinding which was found in 4 names in total. The only two non-mechanical sounds from this category were the sound of dying and the sound of a song.

4 Conclusion

This thesis aimed to describe the main ways in which sound can be coded in language, which is shown on the examples of bird names that were motivated by their vocalization.

The names were approached from an onomasiological point of view, in which the main concern is the referent in a particular context, and I tried to answer the question of how the referent is conceptualized and how its vocalization is mentally processed in the initial stages of the naming process. To achieve this, I used idealised cognitive models that work with Dokulil's term of "reflection of perceived reality in the mid", which allowed me to conceptualize the birds into their most salient features. I then chose the salient feature of sound, which was reflected in particular bird names. By analysing those names, I tried to show how the sound gets coded in language.

The names were then sorted into five categories, depending on the way the sound got coded into language. These five categories were a direct expression of the part of ICM, processing of the part of ICM through the phonological system, metaphor, subsequent single metonymy, and metonymical chain.

The direct expression of part of ICM was realised by lexical verbs that entailed the qualities of the sound in their definitions. These verbs were of two categories- general verbs and bird-related verbs. The distinguishing factor was whether they mention a bird in their main definition or not. The most frequent feature of the sound from the definitions of these

verbs was the highness and loudness of the sound. All of these verbs also had an onomatopoeic origin.

The processing of the part of ICM through the phonological system was realised by imitation of the perceived sound by sounds available to language- the phonemes. This process is regarded as onomatopoeia and it is the most basic way a sound can be coded in language. The onomatopoeic names were divided into two groups depending on their complexity. The result of the analysis of the simple onomatopoeic names was that the most frequent vowels in these names were the vowels /i/ and /i:/, which are used to express highness of a sound, meaning that again, like in the case of direct expression of ICM, the most frequent coded quality of a sound was its highness. The analysis of the more complex onomatopoeic names yielded the results that the basic patterns of bird sound were coded by the number of distinct vowels in them.

The metaphor was approached from the point of view of Lakoff's (1987) image metaphor that was for our purpose converted to auditory perceptions. The result of the analysis was that human sounds were the most frequent semantic area for the metaphor, with whistling as a particular case being dominant.

The most frequent type of single subsequent metonymy was PRODUCER FOR PRODUCED, with animal sounds being the most frequent source of the metonymy.

The most complex way a sound was coded in language was by metonymic chains. These metonymic chains ended up in the majority with the sound being expressed by some kind of mechanical context.

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