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Bird sounds in nature writing: Human perspective on animal communication

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Abstract. The object of study in the present article is birds, more precisely the sounds of birds as they are represented in Estonian nature writing. The evolutionary and structural parallels of bird song with human language are reviewed. Human interpretation of bird sounds raises the question, whether it is possible to transmit or "translate" signals between the Umwelts of different species. The intentions of the sender of the signal may remain unknown, but the signification process within human Umwelt can still be traced and analysed. By approaching the excerpts of nature writing using semiotic methodology, I attempt to demonstrate how bird sounds can function as different types of signs, as outlined by Thomas A. Sebeok. It is argued that the zoosemiotic treatment of nature writing opens up a number of interesting perspectives that would otherwise remain beyond the scope of traditional literary analysis.

1. Introduction

Birds have fascinated humans probably throughout the history of our species. A recurrent motif in fairy-tales is that a man who is able to understand the language of birds will gain wealth, fame, and earn a good life. The urge to extract useful information from the bird songs

has been inspired not only by the above-mentioned pragmatic interests, but also by aesthetic or intellectual reasons. Birds are probably the most popular class of animals that enjoys human aesthetic appreciation. The reasons may be many: birds inhabit practically all corners of Earth; their sighting does not require much resource or specific knowledge, and it can be done parallel to other human activities (such as ploughing or taking lunch, for example). Unlike many other animals, birds are generally not perceived as a source of threat or harm for humans. Maybe most importantly, birds stand out from other aesthetically appealing creatures, such as tropical fish or butterflies, for the fact that they appeal to several senses, not only to sight. Hearing and listening to bird sounds has historically been evidently even more widespread than visual observation, as the former can easily be performed without any special equipment. A number of birds are able to produce sounds audible at distances of several kilometres. Low-frequency calls, such as produced by cassowary or bittern, for example, are especially suitable for communicating over long distances, and are very impressive to human ears. Also, the tactile aspect of bird aesthetics should be mentioned here: it is most probably more pleasant feeling for a human being to pet a bird than a fish or a butterfly.

Bird sounds have predominantly been studied in the framework of biology (see Gill 2007), more precisely of biocommunication, a branch of ethology (most notably the popular works of Lorenz, Tinbergen, Marler, etc.). During the 20th century, study fields such as bioacoustics, zoosemiotics, and zoomusicology (see, for example, Kroodsma, Miller 1982; Sebeok 1990; Martinelli 2002), have taken an interest in analysing bird sounds. Martinelli (2005: 136) has proposed a more detailed division of zoosemiotics, discriminating between ethological and anthropological branches, whereas the former is closely related with life sciences and the latter with social sciences.

In the framework of humanistic disciplines, Gaston Bachelard's philosophical treatment of nest (Bachelard 1969) can be mentioned.

Several folkloristic (Ingersoll 1923; Hiiemäe 1996–1997), and literary studies (Lutwack 1994; Rowlett 1999) on birds and bird sounds have been published. Let us also recall here that the title of Rachel Carson's ground breaking book *Silent Spring* is related to bird song. Analyses of bird songs in literary texts have, however, been regrettably sporadic so far. This is still an important area of research, because, borrowing a thought from Leonard Lutwack, the author of *Birds in Literature*, literature has made and must continue to make the reading public sensitive to nature, and literary birds may prove to be our best link to it.

2. Sounds of birds

John Deely, one of the most influential contemporary semioticians, remarks in his *Basics of Semiotics* that no matter from which field the object of study, if it is considered in a semiotic framework, an exclusive treatment of constructed signs only is not a good standpoint, if our goal is to understand the processes that link human semiosis up with the rest of the life (Deely 2005: 150). In *Signs: An introduction to semiotics*, the ground-layer of zoosemiotics, Thomas A. Sebeok writes, "[…] it is essential to adopt a research strategy that compares human and animal communication systems in order to get a meaningful glimpse into the nature and ubiquity of semiosis" (Sebeok 1994: 41). Already in 1961, an early zoosemiotician Peter Marler has claimed that in the study of communication, all signs, not necessarily the verbal ones alone, are of special importance that may cast light to understanding several evolutionary mechanisms (Marler 1961: 295–296). The importance of the study of bird song as an evolutionary parallel to human language has recently been stressed by scientists in behavioural studies (Salwiczek, Wickler 2004). The authors argue that from the evolutionary view point, human language, analogously to bird song, is a predominantly social phenomenon. Salwiczek and Wickler list

several functional parallels between bird song and human language: they both are a part of an individual's adaptive profile; they are subject to traditive selection that may also have an impact on genetic selection; a close connection between vocal utterances with gestures and body language is characteristic to both human language and bird song. On a more detailed level, they have lexical elements and they follow certain syntactic principles and temporal organisation; they generally have semantic content; both can be used in dialogic interaction and have vocative elements (Salwiczek, Wickler 2004).

In contemporary ornithological handbooks, a traditional differentiation exists between bird songs and calls (Gill 2007: 217). In addition to these two types of bird sounds, third one is important in the context of the present article, namely the sounds that birds make while moving, for example, with their wings or tails during flying.

The term "song" mainly refers to birds' territorial calls that are often aesthetically pleasing to human ear for their specific, repeated patterns (Gill 2007: 217). Martinelli points out the extensive use of musicological terms in ethology. In regard of the term "song", he states that in this framework it is generally used to denote functional aspects of animal behaviour, rather than to refer to aesthetic activities or qualities (Martinelli 2007: 122). Whether and to which degree acoustic behaviour is considered song, or music generally, depends most probably not only on the Umwelts of different species, but also on the affiliation in different (ethnic, age, etc.) groups of human species.

An interesting example of the contested usage of "bird music" is a book that uses the phrase as its title, and that combines the traits of an ornithological handbook and sentimental nature writing (Turnbull 1946). In the present article, the question of "music" is left out, and only the potential significance of some exemplary sounds produced by birds is studied. The complexity of the bird songs' classification and analysis is also increased by the fact that thanks to the specific anatomy of the birds' vocal system, it is possible for some of them to

sing in "two voices" at the same time, using different frequencies and different phrase structures simultaneously (Gill 2007: 226).

In most species, songs are performed by male birds whereas calls are uttered by both sexes. Thanks to outstanding neural song control system, both sexes of certain bird species are capable of reproducing a wide variety of sounds, which enables them to engage in complex behaviour of dialogical nature (Salwiczek, Wickler 2004: 171). Bird calls can be divided into warning, flock, flight, feeding, nest and distress calls (Gill 2007: 217). Two types of bird songs can be distinguished, namely those relating to an outside event, and others that manifest a particular behavioural stance of the signal sender (Salwiczek, Wickler 2004: 173).

On the basis of the prospective addressee, signal exchange between animals may be divided into proprioceptive (such as echolocation), intraspecific (such as mating calls) and interspecific (such as prey–predator) communication (Martinelli 2007: 36). The sounds which are meant for other birds to help in locating the sender, are made up of short notes with broad frequency ranges; the sounds that are meant to report of danger and simultaneously conceal the exact location of the sender, are faint, high-pitched, and with narrow frequency range (Marler 1957; Marler 1961: 302). The alarm calls are often very similar in sympatric birds, enabling inter-specific communication regarding the literally vital information about the threat, its location and other important characteristics (Marler 1957: 21–22). In contrast, the songs related to reproduction are strongly selected for specific distinctiveness, although colonial species' vocabulary tends to have less variation than that of territorial birds, as Marler (1957: 18) remarks. Sebeok points out that territoriality is a phenomenon that assumes recognition of other individuals, including the ability to discriminate between their individual acoustic calls (Sebeok 1990: 82–83).

In his brief analysis of the acoustic channel in comparison with other sensory modes used to transmit signals in animal communication, Martinelli writes that one of its central traits is the rapid

fading of the signal, that is both an advantage, enabling immediate feedback, and disadvantage, as the signal lasts for a limited period only (Martinelli 2007: 43). The repeating or reproduction of an acoustic signal is energy-consuming. The reproduction of bird sounds is a problem in human communication as well. In folklore, many bird songs have been imitated by means of onomatopoetic formulas; the selection has generally favoured species that have pragmatic or symbolic importance in a particular culture. For centuries, naturalists have had trouble finding scientifically apt ways of transliterating birds' sounds either by means of alphabetical writing or music notation, but the attempts have not yielded a successful, generally accepted result so far. The compilers of the *Collins Bird Guide* (Collins 1999), one of the most widely acknowledged European handbooks for birding, take a whole paragraph in the introduction to explain their choices of transcript of the bird sounds. The authors state,

> Although rendering bird voices in writing inevitably is inexact and personal, a serious effort has been made to convey what is typical for each call by trying to select the letters and style of writing which are most apt. […] We do not share the opinion that written voice transcriptions are so subjective that they have little value at all (Collins 1999: 9),

thus indicating that the question of converting bird sound into alphabetical system is a problem far from being solved and agreed upon yet. Nowadays, tape-recording, digital analysis and oscillographic depiction of bird sounds are some means of evading the Procrustean bed of human language in reproducing the bird sounds. These means, however, are also too costly to use in many cases.

The parallels between bird songs and human language are not only evolutionary, but also structural. Similar sounds, tones and tempos enable humans to describe bird songs in terms such as syllables and phrases, governed by clear syntactic principles (Salwiczek, Wickler 2004: 166). The same authors state that not only pair mates, but also

rivals, for example, benefit from co-ordinated vocalisation in the forms of duets and turn-taking in singing that are analogous to the system of turn-taking in human talk (Salwiczek, Wickler 2004: 168).

Such complex social behaviour requires outstanding memorising capacities. Proof of the existence of such abilities in birds is given for example by the performance of rapid and complex motor activities necessary for producing bird songs. These are rather similar to the ones that guide human language utterances or dexterity, like violin playing (Gill 2007: 219). It has been found that the brain areas that deal with complex cognitive abilities are also responsible for language-like acoustic communication (Salwiczek, Wickler 2004: 178). Depending on the species, a bird can use more than 100 different songs (or varieties of songs). Also, it depends on the species of the bird, whether its vocalisation abilities are inherited or may be improved during the individual's lifetime by learning (Gill 2007: 229). The songs learnt by imitating several dominating males' songs lead to local dialects and the temporal persistence of certain "traditions" of singing that can well be compared with human cultural evolution. Local dialects developed in birds are able to limit the gene flow, as communication, and consequently, mating, between birds using songs deviating from which they have heard during their own upbringing period, are less likely (Salwiczek, Wickler 2004: 169).

Peter Marler discriminates between five types of information that an individual bird's song may convey: information about the belonging to a certain species, and to either sex; individual, motivational, and environmental information (Marler 1961: 302). Whereas species-specific information is relatively easy to detect on the basis of some ornithological knowledge, as well as the belonging to either sex, especially in sexually dimorphic species, then detection of information related to one particular individual is not an easy task, at least not for an average human listener of bird songs. The information about the motivation of a bird and the information the song or call conveys about the environment, are most difficult ones to define, Marler writes

(1961: 304), but still they may have the greatest implications for the understanding of the evolution of animal communication systems. The basic capacity of conveying information about the environment by means of signals is common to human language and bird song. Marler represents the view that communication, be it in humans or in other animals, has predominantly social rather than informational function. He proposes that the crucial difference lies in the temporal element of the communication, namely in *delay*, "In animals the delay between perception of an object in the environment and the emission of a signal conveying information about that object is usually a short one. In man the delay may be extended almost infinitely," Marler writes (1961: 308). That very delay is one of the reasons why people are able to compose and enjoy nature writing. It is possible that the same delay in signalling enables humans to construct a special type of sign, namely symbol that adds an extra layer to the interpretation of environmental stimuli.

Before proceeding to a more detailed analysis of the different sign aspects of bird sounds, a short introduction to nature writing and its possible relevance to semiotic studies is provided.

3. Nature writing

In the *Basics of Semiotics*, the main concern of Deely is to explain how semiosis works. The central and unifying object of semiotics as the doctrine of signs, according to Deely, is "the action of signs explicitly recognized as an activity or process constructive not only of human experience but of all organismic experience and, we shall argue, of the physical environment itself" (Deely 2005: 99). In human semiosis, physical environment is converted into a relational one. The experienced signs, the usage of which is common for humans with the rest of the life-world, are reconstituted as stipulatable. In human semiosis, awareness of the signifying activity is present, whereas other animals

use signs without knowing that there are signs. Deely proposes that textuality, not language is the specifically human capability that enables our understanding of semiosis and the discussion of it. This applies to both sciences and humanities, although such differentiation, as well as the discrimination between nature and culture, does not make sense under the conditions of an understanding of the semiotic potential in the life-world as a whole (Deely 2005: 103).

Even in the analysis of literature, which in itself is one of the most "artifactual" forms of anthroposemiosis, the connections with the rest of the world and with the semiosis that is going on there, can not be escaped. Quoting Danish literary scholar Jørgen Dines Johansen, Deely states that "experience of objects, actions, or events, similar to what is referred to in a given text, is a prerequisite to the understanding of it" (Deely 2005: 105).

In nature writing, the objects of natural world are in the centre of the narrative, as suggested by the common name of this type of texts. Literary depiction of natural objects is a problem that can not be solved solely with the tools available to literary theory, as it was indicated above. Also the approaches grounded in the "real world", such as environmental aesthetics, are not sufficient. Umwelt that is based on the cognitive map of the environment, is not reducible to the prejacent physical reality (Deely 2005: 104). There is always something surplus in human semiosic interpretation of the natural phenomena that is added to the object-world during the process. What exactly this additional layer is and how it can be pinpointed, is a research matter for ecosemiotics, the study of the sign relations between humans and nature, and of the communication between them (Kull 1998: 350). In the case of relations between humans and representatives of animate nature, such as birds, zoosemiotical approach comes into use. For example, inter-species' communication is one of the zoosemiotic topics that needs to be reflected upon in the framework of the analysis of nature writing.

The relevance of nature writing to semiotic studies has been advocated in several publications by Timo Maran (2007a, 2007b, 2007c, 2006). He has demonstrated that key concepts of ecosemiotics, such as contextuality, cultural mediation of nature, textuality, textualisation of nature, and identity construction are all well represented in the texts of nature writing. On the other hand, nature writing provides a welcome set of source material for ecosemiotic analysis, as the imbalance in favour of theoretical studies against the applied ones frequently looms in semiotics (Maran 2007c: 65).

Nature writing has been outlined and studied so far mostly in the framework of ecocriticism, a branch of literary studies that has acquired institutional shape in 1980s. In the American ecocriticism tradition, nature writing has been defined as texts that are based on the author's immediate experiences of nature that are expressed in literary style (Buell 1995: 6–8). The main function of a piece of nature writing that differentiates it from fiction, is to direct the reader's attention towards the actual natural environment. This is accompanied with the need to have at least some knowledge about nature in order to understand the texts. Thus, nature writing serves directly pragmatic or political interests — its aim is to affect the readers' behaviour in the "real" world (Maran 2007c: 64). Nature writing often relies on or contains natural history information, likening it thus to scientific texts. However, as the production of such a text is firmly linked to the author as the experiencer, it also contains emotional interpretations of natural phenomena, as well as direct or indirect information about the beliefs and value systems that have shaped the author's particular response (Tüür 2007: 81). It is remarkable to note how much folkloristic material has been used in different accounts of birds in Estonian nature writing. This indicates that our Fenno-Ugric cultural roots are deep and have kept nourishing our understanding of the surrounding world until the 21st century.

In addition to personal approach and philosophical interpretation, the two above-mentioned criteria of nature writing by Buell, another

American ecocritic Thomas J. Lyon emphasises that nature writing must contain reliable information on natural history (Lyon 2001: 20). This is a very important characteristic indeed, as nature writing should definitely not lie about natural facts, at least not in an intentional manner. It may easily happen that scientific facts that were taken as true some decades ago have proven to be false by our days. It must be considered, however, that the nature writers who have relied on their contemporary scientific data have done so in full faith. In the history of Estonian nature writing, scientific reliability has always been one of the central concerns of the authors. This fact can be explained with the academic training in life sciences of the majority of our nature writers.

The reliance on scientific facts often leaves its traces to the structure of the pieces of nature writing, as Lyon (2001: 21) indicates. In such essays, a new paragraph is generally opened with presenting a scientific fact, followed by the explanation (or interpretation) by the author. As a result, the choice of words, syntax, and even the outline of the essay are more laconic compared with essays relying on purely subjective impressions. Lyon (2001: 23) also points out that the author's personal background and experience, as well as his/her position in relation with the observed environment play a role in structuring the essays.

According to Buell, a text of nature writing is most often structured in one of the following ways: as a seasonal chronicle, as episodes in an excursion, or as items in an inventory (Buell 1995: 421). On one hand, following one of such forms gives a clear organisatory principle to the text, but on the other hand, it induces fragmentation, especially when compared with the mainstream prose, that is, narrative fiction.

Inside nature writing as a genre, the typical ways of organising the texts may work differently than in the global context of belletrist literature. Whereas an over-exploited form becomes dull in narrative fiction or poetry, it may contribute to the meeting of readers' expectations in nature writing. As certain formats are repeatedly used in writing about similar things, the readers' responses grow more

automatic; they are already able to extract a considerable amount of information from the pure form of the text. Such recognition conditions readers' expectations as to the content and message of the text — but also, if the initial expectations are not met, misreading and disappointment may result. We may guess that if a reader is interested in obtaining an emotional account of birds from a piece of writing, he or she would be mostly looking for texts that are organised as rambles. At the same time, in contemporary literary scene, a ramble is not a popular format at all.

Birds enjoy the position of a favourite subject matter of nature writing. Various technical modes used in the creation nature writing are well suitable for representing birds. The following account of the characteristic features of nature writing that support the appearance of birds as subjects in the texts, is based on the first generalising study on Estonian nature writing (Tüür 2003).

As said above, nature essays often contain information similar to the inscriptions in biological field study notebooks: the exact dates, times, and toponymy related to encounters with the particular species; the information about the sex, age, behaviour, direction of flight, engagement in habitat, etc. of the individual, sometimes even the directions of how to get to the place of observation. All these items are routine information in professional ornithologists' field notebooks. It is easy to use the same format in nature writing, seasoning it with some personal comments and avoiding abbreviations, at the same time keeping to scientific viability. The essay *Sounds* by Fred Jüssi (1986: 27–28), part of which is later on analysed in more detail, is a nice example of such writing. The author describes a sequence of his predominantly audial spottings of birds at a certain location, a Western Estonian islet. The duration of the observation may have lasted no longer than a couple of minutes; the number of bird species mentioned is seven. About each of them, information about their current behaviour during the observation is given. Everything, except

the poetic style of description, could well be jotted down into a field notebook.

Another common strategy is to focus one nature essay on one particular species, recalling a sequence of observations that may stand temporally apart, but that form a coherent whole in portraying the species or the particular individual bird. In Estonian nature writing, especially the older generation of nature writers (Põldmaa 1973; Lepasaar 1989; Jõgisalu 1974) has used this option. In addition, such one-species-centred nature essays usually provide the reader with scientifically apt biological-ecological information, even numeric data that is often drawn on scientific literature. It is not of little importance to note that the scientific sources are also directly referred to in such texts.

As nature writing inevitably has an ambition to be part of literature as *belles lettres*, it makes use of various stylistic devices and figures of speech: metaphors, metonymy, epithets, emphatic vocations, comparisons, parables, personal anecdotes, etc. Onomatopoeia is among the most important, alas equally controversial of the stylistic devices used in nature writing. However, in Estonian nature writing the onomatopoetic rendering of bird calls is rarely arbitrary: it is most often based on our rich tradition of oral folklore that has some fixed and even today generally known formulas for most of our common song birds' songs.[1]

Folklore and its usage are certainly culture-specific, but nature writing is even more author-specific. As the direct contact of the writer with the nature forms the prerequisite of nature writing, the observations and comparisons are quite often literally person-dependent. For example, some bird sounds like the high-pitched call of goldcrest, are inaccessible to elderly people whose hearing is in decline.

[1] Even a child would know that the thrush nightingale sings in Estonian about a lazy girl who needs to be encouraged to work by slapping the whip.

Thus it is predictable that the species is likely to disappear from the aged nature writers' rambles, at least as a part of soundscape.

One more peculiarity of nature writing that makes it stand apart from fiction is its tendency to be illustrated. As sight is the primary channel of information for human species, it helps to relate the multi-sensorial source material of nature writing to the everyday experiences of the readers. In Estonian tradition, photographs are the most common way of creating an effect of intersemiosis in the books of nature writing (Tüür 2004). This stresses the strict correspondence between the text and the particular biological individuals in nature, as opposed to drawings that tend to generalise, typify, or even fantasise. Illustrations help to add an extra layer to the nature essays and thus appeal to these book-lovers who for some reason are not keen on thorough reading of essayistic or popular science texts, such as children.

In his recent writings, Timo Maran has discussed at length the concept of nature-text, a complex set of meaning relations between natural environment and the texts of nature writing that result in certain resemblances between its two components. "The relations between the written text and natural environment operate similarly to the relation between two interconnected texts or a text and its context, where the interaction significantly shapes the possible interpretations of the text," Maran writes (2007a: 280). In the analysis of nature-texts, Maran sees three principal directions of investigation. The first option would be to study the different structural and communicative connections present in nature, as they are observed in the field by the nature essayist, and are later represented in written text. Secondly, it is very significant, which parts of the nature are given or not given a voice and/or subjectivity in the text. This indicates which are the values for the writer; how is the human semiosphere positioned in relation to non-human (foreign) semiospheres, and which strategies are used in order to overcome the communication barriers between different species. The third way is to follow the correspondences

between the text and the landscapes it embraces. Most usually temporal or spatial sequence is used in structuring a nature essay in respect to the environment it refers to. (Maran 2007c: 66).

An interesting illustration of the possible functioning of nature-text as a complex unity where human textuality influences natural organization and vice versa is an example provided by Salwiczek and Wickler (2004: 170). Discussing the traditive songs of some bird species, they write about a European traditional custom of teaching hand-raised bullfinch nestlings whistled melodies of folk songs. The birds are able to teach them to their offspring without further human intervention. On the other hand, the melody that is to be taught by the human tutor needs to be carefully chosen in order to fit the natural range of bullfinch song in duration, pitch, and rhythm. In this case, in one direction, elements of human culture were inserted into the birds' Umwelt. In the opposite direction, this tradition may have conditioned the repertoire of local folk songs through the necessity to have songs suitable for bullfinches available in the common culture.

The general points for discussing nature writing proposed above are macro-level observations. Studying bird sounds in nature writing requires also micro-level analysis; otherwise a number of textual features, as well as their respective counterparts in natural environment, may be dismissed. In the following, two rather small excerpts of nature writing by two major Estonian 20th century nature writers serve as the source for analysis. My attempt is to show that quite simple nature-texts may be semiotically significantly multi-layered, and that they prove to be a worthwhile material of study for eco- and zoosemiotics, casting light from one certain angle on the mechanisms of human–non-human communication.

4. Textual bird sounds

The first attempts to apply semiotic methods to the study of natural phenomena can be traced back to early 1960s. Already in 1961, Peter Marler uses the four categories outlined by one of the ground-layers of semiotics, Charles Morris, namely identifiers, designators, prescriptors, and appraisors, in classifying the types of information exchanged in animal communication (Marler 1961: 301). In 1963 Thomas A. Sebeok suggested that ethology should be studied semiotically, as zoosemiotics (Sebeok 1963: 448–466). From there on, animal communication, including communication of humans with other animals, has been studied using semiotic methodology. Sebeok's works are among the most outstanding achievements in this field until the present day.

As the Umwelts of all species are constructed and maintained differently, using different perception organs and channels, and driven by different needs, it is not possible to assume that the signals emitted by what ever individual should be meaningful to any other individual. Therefore, it is necessary to make a distinction between communication and signification (Martinelli 2007: 28; Maran 2007b: 42). The first describes a situation where both sender and receiver share a considerable amount of the principles determining the form, the rules of codification, and the context of the messages. This sort of interaction is usual in intra-species' communication, such as human language, for example. In the other case, the semiosis resembles the way inanimate environment is interpreted by a living creature. (Maran 2007b: 42). Both instances of communication as well as of signification can be found in nature writing, describing human encounters with other animals.

The present analysis of nature writing makes use of the six categories of signs outlined in Sebeok's book *Signs: An Introduction to Semiotics* (Sebeok 1994). The six categories appear to be a typological generalisation of "the types of signs most regularly identified and commonly employed by semioticians" (Sebeok 1994: 17). In the book,

each of the six types is provided with a brief history of the identification of the genus, its distinctive traits, and some examples of the dominant appearance of the particular aspect of the sign. The aspects of signs proposed by Sebeok are based on the threefold typology of signs outlined by the currently most widely acknowledged guru of semiotics, Charles Sanders Peirce, namely icon, index, and symbol. Sebeok mentions that Peirce's elaborated list of signs consists of sixty six varieties, but the six categories presented by him take into account also the legacy of many other semioticians, and aim at providing a system that would be applicable to a wider area of research than merely human communication; in his own designation, zoosemiotics (Sebeok 1994: 20). Sebeok lists the six "species" of signs to be discussed further in the text: signal, symptom, icon, index, symbol, and name. Sebeok reminds the reader that all signs are relational and contain the different sign aspects simultaneously. Each of its aspects may dominate others in any of the particular cases of signifying — "aspects of a sign necessarily co-occur in an environment-sensitive hierarchy" (Sebeok 1994: 21).

Before proceeding to the detailed discussion of the sign types, Sebeok introduces the category of zero signs, that is, the situation where the very absence of a sign itself is significant (Sebeok 1994: 18).[2] In Estonian nature writing, an essay titled *Silent Spring* by Fred Jüssi provides a beautiful example of such "zero significance": it describes a warm spring day that suspiciously lacks any bird sounds (Jüssi 1986: 21–22). As the text proceeds, it turns out that the exceptionally warm day has occurred in the middle of the winter, so that the absence of song birds is only natural. Still, the point of the strong signifying power of silence and absence of sounds is made with great persuasiveness.

[2] This is a widely used poetic device known in literary studies, too; especially employed in free verse.

The first excerpt of nature writing studied in depth in the light of the six major aspects of a sign is part of the essay collection *Wagtail* by Fred Jüssi (b. 1935). Jüssi graduated from University of Tartu as a field biologist, and for most of his life has worked as a freelance radio journalist, taping different sounds of nature and commenting them in radio broadcasts. His work has enjoyed wide popularity. The essay *Sounds*, dated 1976, describes an instance of early spring evening observation of seabirds on an islet near Hiiumaa. Jüssi writes,

> A small flock of goldeneyes flies across the islet with their wings whistling. Here one gets used to the whistling of the goldeneyes, one does not even notice it any more, but in the inland woods and moors, it is one of the most beautiful sounds of a spring night. The scream of a fox in a February night makes one feel like responding to the call, but in the whistling of the wings of goldeneye, the haste of someone driven by longing for home is hidden. At least, this is how it has seemed to me at nights spent in the woods by a campfire. (Jüssi 1986: 28)

In this description, a bird sound, not a call or a song is at stake. The goldeneye's (*Bucephala clangula*) whistling sound is a side-effect of the bird's movement through air; the sound mechanically results from its wing beats. Ducks and heavier birds, such as swans, all make noise with wings while flying because of their heavy bodily constitution. Juvenile goldeneyes who do not possess stiff feather tips yet, do not produce this flight sound, but it is especially loud in male goldeneyes during winter and spring. There is no evidence whether the whistling flight itself is a distinctive feature in goldeneye's sexual selection or not. Deely remarks that "Within experience, the status of objects not designated to be signs with other objects so designated is peculiarly unstable, not because of the deficiency in the sign, but because of an instability in the status of the object as such" (Deely 2005: 79). In human Umwelt, the flight noise of goldeneye is constantly objectified among naturalists who need to recognise it in order to be able to identify the species. Therefore, Deely's logic of the distinctiveness of

human semiosis (Deely 2005: 80) applies here: the signifying relationship itself is objectified and given the dimension of stipulability which enables its further repeated usage as a sign.

The flying noise produced by goldeneye is remarkably beautiful for human ears, whereas its actual sight of flight is not gracious at all. "Flight rapid but appearing laborious," the *Collins Bird Guide* states (Collins 1999: 66). However, listening very often allows much more poetic imagination than on-looking. It can be proved by looking at the goldeneye flight sound's descriptions in various bird guides. In *Collins* (1999: 66), it is described as *loud, musical whistling*; in the Estonian translation of Jonsson's *Birds of Europe* (Jonsson 2000: 116) as *characteristic chiming swish*. The Ukrainian bird guide (Fesenko, Bokotei 2002: 82) takes the sub-section 'call' literally, and only mentions the goldeneye's courting call, but says nothing about the wing-beat-sound, evidently not classifying it as a call. At the same time, this sound is by which the goldeneye is most commonly identified, as the voice of the goldeneye resembles other ducks and is seldom heard by humans because the flocks normally spend most of their time on open sea far off the coast.

An intensely poetic description of the goldeneye's flight sound can be found in an Estonian bird guide that combines zoological information with records from Estonian folklore. It reads: "In flight the wingbeats create a peculiar 'bljübljübljü'-whistling, as if a pebble cast onto and gliding on the surface of young ice" (Mäger 1994: 273). The prerequisite of understanding the beauty of this comparison, however, is a personal experience of throwing pebbles onto young ice and of the resulting sound.

Mäger also remarks that goldeneye's migration can be followed even in dark, thanks to its swishing flight that makes it audible. That is exactly what Jüssi's story takes an advantage of. More generally, this observation indicates the vital role of sounds in both nature observation and in nature writing: it makes other species accessible to human perception in the conditions where sight is blocked for some

reason. Other sensory channels, such as touch, smell or taste, tend to have but marginal importance in identifying other species by modern humans. In the context of zoosemiotics and inter-species' communication, Sebeok points out that by using multiple sensory channels simultaneously or in succession, the risk of errors in reception is minimised (Sebeok 1994: 9).

Goldeneyes as the birds of passage that are performing their routine spring migration definitely do not make their wing beat noise deliberately, nor do they have any intention to announce their presence by this sound. It is probable that other waterfowl would pay attention to the flying noise of goldeneye only if it was preceded by sudden take-off noise, thus indicating that something, like an approaching predator, has disturbed the leaving birds. Timo Maran draws attention to the fact that in human interaction with the non-human life-world, the communicational situation is often somewhat "deficient" in comparison with the model communication situation based on human language. The specific addresser may not be known, or it may be absent, or the addresser and the addressee are principally different because of their affiliation in different species with barely overlapping Umwelts. (Maran 2007c: 62). Here, again, the distinction between communication and semiosis becomes handy. In many cases, the human perception of non-human environment may be thus classified as semiosis, not as communication.

For a human, as well as for a non-human hearer of the goldeneye's flight sound, it is in first order a mere signal. Signal is defined as "a sign that mechanically (naturally) or conventionally (artificially) triggers some reaction on the part of the receiver" (Sebeok 1994: 22). Verbal communication has the signal-aspect underneath the symbolic function, too. If we do not understand the language of the utterance, or the speaker's intention, if we can not tell apart the words, etc, as is normally expected in human intra-specific communication, an utterance or text may well function as a mere signal for us. The same is true in inter-specific communication — for example, we may be able

to smell a weird scent produced by a bug, but we do not understand its message. The presence of an olfactory signal is still a fact. As the whistling of a goldeneye's wings can be heard by humans without any special equipment (unlike the ultra-high sounds produced by bats, for example), it can be defined as a signal in human Umwelt even if the listener does not have a slightest idea about the source of the sound. Sebeok remarks that "signal" is most commonly used term about any animal behaviour in animal communication studies. As such, it attempts to be a neutral, technical term that does not imply anything about the possible meaning of the signalling behaviour, neither in the animal's own Umwelt nor in humans' interpretation.

It is quite evident that for the birds, in both intra- and inter-specific communication, the sounds that they produce, function at least as signals. In reductionist language, bird song can be explained as triggered by neuro-chemical reactions to the environmental changes, such as prolonging of the days (Mänd 1998: 16–17). In discussing the impact of a male chaffinch's song on a female chaffinch, Marler states that it can not be proven that the song has any meaning for the female, but only that a certain input of information performs selective actions upon her (Marler 1961: 301). In case of such interpretation, the notion of "symptom" should be used, understood by Sebeok, on the basis of Peirce, as an instance of index, a non-arbitrary sign that does not require an intentional sender (Sebeok 1994: 49). Goldeneye's wing noise is a symptom of its condition. However, it is highly probable that in a bird's Umwelt there would be *meaningful* to distinguish one's con-species from the rest of the animate and inanimate environmental stimuli, to realise them as a qualitatively different group towards whom the sign activity could be directed. Whether the further decisions — to utter an alarm call, or a mating call, or a flock call — can be considered intentional or reflective, must remain an open question here. As Sebeok (1994: 4) has warned, we can not understand the world, or the process of semiosis from outside of the confines of our human Umwelt.

A possible solution to this problem is provided by Timo Maran who in his development of Sebeok's zoosemiotic communication theories, presents two models of cyclical communication, one by Wilbur Schramm and the other by Jakob von Uexküll (Maran 2007b: 43). According to Schramm's model, it is not necessary that the messages sent and interpreted by the participants in the communication should use the same sign system or the same communication channels. In case a signal is received by the sense organs of another individual, it interweaves the communication cycles of the sender and the receiver regardless of the fact whether the signal was meant to be sent or received by the particular individuals engaged in the process. Martinelli points out that there are two different phenomena, intentionality and the awareness of the intentionality, that should not be confused (Martinelli 2007: 21). In human semiosis, the awareness of intentionality is generally present alas it does not govern all our actions. Many actions in humans are taken without a clear perception of their intentionality, although they certainly are meant to be performed by the particular individual. It is probably true in the case of non-human animals, too. Deely writes that the more complex levels of semiosis necessarily continue to operate on the basis of the previous levels (Deely 2005: 124). In the present instance, we can conclude that on one elementary level, bird calls in nature are signals. A trivial sentence like "Birds are singing" is a textual reflection of the human observation of a signal.

Proceeding along with the different aspects of a sign, indexicality is to be discussed next. Index, as Sebeok explains, is related to its source directly, thus being a witness of presence (Sebeok 1994: 65). There is an existential connection between the sign and its source. Therefore, intentionality is not necessary for an indexical sign. He also points out that natural sciences in general work empirically by first detecting indexes and then interpreting them (Sebeok 1994: 74). This is a very important remark in the context of the present study, as it gives a hint about the basic text production mechanism of nature writing.

Sebeok (1994: 69) reminds that the indexical presence need not appear as spatial proximity. In case of bird sounds, proximity is inevitable, but it is temporal, not spatial. Sounds produced by sources (birds) in motion, often fade faster than visible indexes, but the case may be opposite, too, like in the passage under our study. The whistling wing beats of goldeneyes indexically mark their presence in the dim night of early spring when the observation described by Jüssi takes place. The narrator is not able to see the birds, nor is there any visible index of the birds (such as a dropped feather, footprints, etc.) referred to. The audial index is predominant, and it lasts for a considerable period of time, so that the human protagonist even has time to elaborate the index into a symbol in his mind. For a human listener with some ornithological experience, the whistling is an index of the presence of male goldeneyes in migration flight. Here, it is important to remind that listening in general enables human interpretation within wider limits than seeing — thus, of course, creating more possibilities for misunderstanding and misinterpretations, too.

In the wildlife, the song, or any other sound produced by a bird then functions as an index. It is much more common that a bird is heard rather than spotted in the field. In Estonian folklore, metaphoric descriptions of bird sounds are much more frequent than comments on their appearance (see Hiiemäe 1996–1997). Most of the birds do not display themselves very readily, or their looks are just very modest, or they are located somewhere (normally high or far) where it is difficult to see them without special equipment. Singing or any other sound that can be associated with a bird serves as an indexical sign of its presence. Identifying the source of the audial index requires experience. Misinterpretation of a (bird) sound as an index of a live creature's presence in proximity may simply result in a false assumption, but also in horror and panic in more grave cases. The culturally conditioned fear-seasoned attitude towards owls, for example, may be pointed out as an example of such misinterpretations, firmly rooted in ancient as well as in the modern folklore. As some owl species' mating

calls (owls' mating usually takes place in February and March) resemble the cry of a baby, misinterpreting the sound as an index of the presence of a small child in a remote area during a cold winter night instead of an index of a predatory bird may cause anxiety indeed.

The next important aspect of a sign that is often present in nature writing — but not only there — is iconicity. Sebeok (1994: 86) surprisedly notes the often-encountered deliberate confinement of understanding of iconicity to visual modality only. He assures that iconicity is present in numerous multi-modal forms in human and other animal existence in everyday life. Bird songs appear as audio icons in literature, both in field guides' scientific descriptions and in nature writing where the onomatopoetic imitations of the bird calls often rely on folkloristic conventions. Recognising such iconic relation requires vivid audial imagination or reading the respective textual representations aloud, in order to identify them as icons. The recognition is made more complicated because of the different transcription and pronounciation rules in different languages, but also because the bird species themselves have regional differences in their calls.

The words "vilin"[3] and "whistling" used for describing the sound of goldeneye's movement are in themselves iconic, inasmuch as they both have strong onomatopoetic basis. The phoneme "i" marks the high pitch of the sound, "v/w" refers to the sound of wing tips' moving through the air. The trouble with the ornithological, scientific rendering of the sound can be illustrated with the transcription "bljübljübljü" in Mäger (1994: 273), to which also the word "vilin" has been added, in order to make sure, which type of sound is described.

Peter Marler makes a distinction between continuously variable and stereotyped signals (Marler 1961: 309–312). He indicates that the former are suitable for conveying information about various environmental conditions, whereas the stereotyped signals are important in

[3] "Whistling", "swishing" in Estonian.

communicating species-specific and individual information. The latter may frequently override the need to signalise about the surrounding conditions (Marler 1961: 312). In stereotyped signals, iconicity plays an important role. Such an example of iconic rendering of a bird sound in Estonian nature writing comes from Professor Johannes Piiper's collection *Pictures and Sounds of Estonian Nature* (first issued in 1935, reprinted in 1975). Piiper, a long-time Professor of Zoology in University of Tartu, was known for his habit to make field notes, adding to them comments on the aesthetic aspects of the observed natural phenomena. From this material stem his numerous nature essays that form the canonical core of Estonian nature writing. His essays are always dated and the locations indicated with great preciseness.

The following excerpt is from a piece titled *On road to Riga and around Konguta, 01.06.1936*.

> Like silver pellets being dropped into a glass bowl, the chiffchaff song's syllables, simple and cordial, sound from the high crown of a fir tree. (Piiper 1975: 269)[4]

The voice of the bird (*Phylloscopus collybita*) whose English name chiffchaff is derived on the onomatopoetic basis, as well as is the case in many other languages (Finnish *tiltaltti*, Estonian *silksolk*, German *Zilpzalp*, Dutch *tjiftjaf*), is depicted in three different bird guides as follows:

English (Collins 1999: 306): "Song a *slow and measured* series of well-spaced clear, forceful, *monosyllabic* (exceptionally disyllabic) notes on *two or three pitches*, 'silt sült sült sult silt silt sult sült sült silt…' Birds newly arrived at breeding site add a muffled 'perre perre' between verses."

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[4] In Estonian: „Nagu klaasanumasse langevaid hõbekuulikesi heliseb kõrgest kuusekroonist väike-lehelinnu laulusilpe, lihtsaid ja südamlikke."

Estonian (Jonsson 2000: 450): "Song monotonously tinkling [like a wooden sheep bell — K.T.] 'tsilt, tsalp, tsilt, tsalt', among which there is now and then a quiet 'tsr tsr'."

Ukrainian (Fesenko, Bokotei 2002: 294): "Song — repeated monosyllabic 'tinj-tjan-tenj', intermittent call — silent, soft 'f'juiit'."

The regular territorial call of chiffchaff has evoked a number of explanations in the folklore. The iconic qualities of the song have resulted in a number of vivid comparisons, some of which are briefly accounted in the following. The Latin name for chiffchaff '*collybita*' means 'money exchanger' — as an analogy to the sound of the coins being dropped and counted. In German, the name '*Zinzahler*', the interest payer, is known (Mäger 1994: 94).

The bird is believed to forecast rain in Estonian folklore, because of the iconic similarity of its song to falling of raindrops. Therefore it has been called "rainbird", "rainfinch". A folk story about the origins of chiffchaff's song goes that the bird learnt it from a horse whose droppings fell into a puddle. Another version is that the bird borrowed its song from a maid who was milking a cow, as it was late to the occasion where all birds were delivered their songs, thence "milker bird", "cow bird". The third iconic sound analogy in folklore is made with a blacksmith's hammering sound — chiffchaff is "cuckoo's smith", "small smith", "cuckoo's shoer", also "cuckoo's farmhand", as it is often feeding cuckoo's offspring in its nest. Sebeok remarks that the human process of name-giving to other animals has strong tendency towards iconicity (Sebeok 1990: 90). Such "cultural labelling" creates a possibility for easy memorising and a certain intimacy between humans and the other animals named.

Besides the question of resemblance, the question of aesthetic and ideological choices rises in the case of audial iconicity. Piiper's description of the chiffchaff's song as "silver pellets being dropped into a glass bowl" has a strong visual appeal besides the audial one. In that regard, it could even be classified as a symbol, rather than an icon, although there certainly are iconic qualities to this description. The

image of a glass bowl and silver pellets reminds of somewhat bourgeois interior settings, supporting Piiper's overall tendency to aesthetisation in his nature essays. As such, this image even reminds of Sebeok's proposed "fetish signs" that overlap, according his definition, with several sign categories: these are predominantly indexical signs that signify metonymically and that are intermingled with both iconic and symbolic elements (Sebeok 1994: 101). In the chiffchaff's case, the song indeed stands indexically for the bird's presence upon a fir tree beside the road. The fine sound description renders the writer's sympathy to the bird and its song (characterised as "simple and cordial"). The description is symbolic as the song is associated with luxury items (glass bowl, silver) that should add a sense of value to the sound, and probably also refer to the author's own value preferences[5].

Actually, Piiper is not alone in his aesthetisation attempts in Estonian nature writing. A description of a chaffinch's song by his contemporary, an Estonian artist and naturalist Ants Murakin, also uses the imagery of glass and silver, but finally opts for pure natural water: "It is interesting to follow how the tiny bird after each four or six resonant syllables — tsilk-tsolk, tsilk-tsolk — gives two syllables in equal height and sound, tsilk-tsolk tsolk… Exactly like the dripping of water sometimes alters its sound." (Mäger 1994: 93).[6]

From the iconic resemblances, it is but a small step to symbols, as the quotations and their analysis above have already demonstrated. Deely notes that one peculiar trait of human semiosis is its ability to transcend the biological heritage anchored in the physical world, and to operate on a purely imaginary and/or abstract level (Deely 2005: 84).

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[5] Note that Piiper has substituted the folkloristic horse droppings and a puddle referring to agricultural settings with silver pellets and a glass bowl, implying city culture.

[6] In Estonian: „Huvitav on jälgida, kuidas tilluke lind peaaegu iga nelja või kuue vahelduvalt resoneeriva silbi — tsilk-tsolk tsilk-tsolk — järel taob kaks korda ühekõrguselt ja samaheliliselt: tsilk-tsolk-tsolk… Nagu vee tilkuminegi muudab vahel oma heli."

He terms it the ability for textuality, a phenomenon that enables re-constitution of the human Umwelt to a degree that no other species is able to reach. Whether the consequences of such ability are favourable in the evolution and survival of the species or not, is already a different question.

In the case of the goldeneye as well as of the chiffchaff, the textual representations of the sound imply audial iconicity and the on-site felt presence of the song, resp. singer in addition to the symbolic value added to the sound by the authors. This conforms to Sebeok's claim that "A given object can, depending on the circumstance in which it is displayed, momentarily function, to a degree, in the role of an icon, an index, or a symbol." (Sebeok 1994: 67). In human artistic interpretation both indexical and iconic representations tend to acquire strong symbolic character that overrides the previous aspects of signs that Sebeok terms "natural", as opposed to "symbol, which is in the conventional mode, or reflective of a relation that is characterized by an imputed quality" (Sebeok 1994: 81–82).

In Piiper's case, the symbolic value of the bird sound lies in its description as a phenomenon that combines luxury with simplicity, adding to the overall solemn atmosphere of the essay. The symbolic aspect is directly related with human feelings in the landscape and in the soundscape. The bird itself is not attributed any symbolic aspirations; only the impact of the sound to the particular human listener's mental state is described. In Jüssi's *Sounds*, the wing beat sound's predominant aspect of indexicality is fast elaborated into a symbol in the text: first, it is compared to a fox's cry, and then it is attributed human feelings, such as longing, homesickness, haste. The author, as a trained biologist, is aware that it is not appropriate to incriminate these feelings to the birds themselves. So in this passage, the presence of the flight sound is revealed in two parallel aspects, as an index (related to birds) and as a symbol (related to humans).

"We may note that evolution from iconic to arbitrary signals is probably a quite common occurrence, as part of the process known as

ritualization," Marler states in the conclusion to his article on animal communication (Marler 1961: 316). One of the exemplary moves towards arbitrariness is the usage of names, the last type of signs treated by Sebeok. He explains that all animals broadcast a steady stream of identifiers, that is, signs indicating their affiliation in a certain species, sex, social rank, reproductive status, etc. Many bird species have special sequences of sounds that are characteristic to one individual bird and that thus enable to identify birds also on the level of an individual (Sebeok 1994: 38). Through individual learning, a sound or a sound sequence is established as characteristic of one individual only, thus starting to function as a proper name for that individual and its group members. Names, understood as the traits specific to one individual only, may be olfactory, acoustic, optical, or related to appearance (Sebeok 1990: 81).

In our first example under study, the phenomenon of name is probably not applicable, as the wing beats most likely do not convey personality to the same degree as territorial songs of song birds. In humans, we may be able to tell a person by his or her footsteps, but it is dubious to claim anything like this about birds' wing beats (although the capacity to recognise other individuals on the basis of their habitus exists in animals). As Sebeok (1990: 82) indicates, individual recognition based on specific traits in songs, calls, and the so-called signature tunes, exists among birds. The great energetical advantage of using proper names has been pointed out already by Marler in 1957: "To ensure that the signal shall evoke a response from the biologically appropriate individual, specific distinctiveness is often an advantage" (Marler 1957: 14). Salwiczek and Wickler repeat this idea, stating that the ability to address particular individuals is a major advantage over anonymous signalling, because both signalling and being attentive and responding to a signal are costly behaviours. A receiver should not react to a signal unless it is in his interests. The sender's expected benefit, in turn, would rise from the responder's reaction. (Salwiczek, Wickler 2004: 173).

In chiffchaff, it is probable that its song would contain sequences or passages unique to this particular individual. From this excerpt it does not become evident, however, in what respect would the described bird's song differ from his con-species' males in the same region. It may be assumed, though, that it has its individuality. The problem of recognising it may well lie in the human sensory apparatus that is not able to distinguish the minor individual-specific traits in bird song in brief listening. It is easier for us in the case of species with more complicated songs, and with a greater tendency to imitating or incorporating foreign sounds in their song (such as starlings or reed warblers, for example).

Sebeok distinguishes between cultural and natural individuation (Sebeok 1990: 88). The individual-specific sounds or olfactory signals are examples of natural individuation. The notion of cultural individuation is illustrated with the practice of naming animals by humans. That process goes back to Biblical times ("[…] whatever the man called each living creature, that was its name", as is written in the Genesis). The animals that are to be incorporated in the human culture, the "non-natural sphere", are usually given proper names. Often these are arbitrary, although they can also be based on the particular species' typical call, or on some local cultural conventions. The naming of non-human nature is a problem that would definitely need a more thorough ecosemiotic analysis, outside of the present zoosemiotic framework of the treatment of bird sounds in nature writing.

5. Conclusion

Human interpretation and textual rendering of bird sounds is a topic that has seldom been subject to literary studies. The group of texts commonly designated as nature writing has been researched in the framework of ecocritical studies. In many studies, the emphasis has

been on ideological implications of the depictions of nature. With the tools provided by general literary criticism dealing predominantly with symbols, it is possible to treat only the "top of the iceberg" of the texts of nature writing. Semiotic approach enables us to open up more layers in a piece of nature writing, and may contribute to our greater overall understanding of the non-human world.

The problem, whether signs produced in one species' Umwelt can be meaningful in the Umwelt of another species, can be overcome by recognising the ubiquity of semiosis, as proposed by Sebeok and Deely. The difference must be made between intentional communication and semiosic activity that goes on regardless of anybody's will. The signs that transcend one animal species' Umwelt inevitably become at least signals in the perceiver's Umwelt. Depending on the situation, they can also become symptoms, indexes, icons, symbols, or names. The analysis of examples from Estonian nature writing shows that all these categories can be detected in the study material.

In a number of aspects, bird song is both functionally and structurally parallel to human language, as a number of outstanding life scientists have demonstrated. Deely argues that it is not so much language, but textuality that is a specifically human ability. Textuality enables us to take a distance and to model the world in extremely supple and multiple ways. Regarding nature writing as one such attempt that is still firmly rooted in physical reality, it is possible to follow and detect a number of transformations that a bit of information, such as a bird sound, undergoes when it is perceived and interpreted in human context. Such an analysis may eventually help to cast light to the processes of natural selection, as well as to our understanding of the possibilities of communication with the non-human world.[7]

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Птичьи звуки в литературе о природе: человеческая перспектива в животной коммуникации

В статье рассматриваются птицы, точнее пение птиц, как оно представлено в эстонской литературе. Обсуждаются эволюционные и структурные параллели между пением птиц и человеческим языком. Человеческая интерпретация птичьего пения ставит вопрос о возможности перенести или «перевести» сигналы между умвельтами различных видов. Намерение посылающего сигнал может остаться неизвестным, но процесс сигнификации в человеческом умвельте может быть прослежен и анализирован. Используя семиотическую методологию я рассматриваю отрывки из литературы о природе и пытаюсь показать, как птичьи звуки могут функционировать в качестве разных типов знаков (по Томасу Себеоку). Я утверждаю, что зоосемиотическое рассмотрение литературы о природе открывает интересные перспективы, которые остаются за рамками традиционного анализа литературы.

Linnuhääled looduskirjanduses: loomade kommunikatsioon inimeste nägemuses

Käesoleva artikli uurimisobjektiks on linnud eesti looduskirjanduses, täpsemalt lindude poolt tekitatud häälte kujutamine neis tekstides. Linnulaulul ja inimkeelel ilmneb nii evolutsioonilisi kui struktuurilisi sarnasusi. Inimese poolt linnuhäältele antavad tõlgendused tõstatavad küsimuse, kas on võimalik edasi anda või “tõlkida” signaale erinevate liikide omailmade vahel. Signaali saatja kavatsus võib jääda väljapoole meie teadmiste ulatust, kuid selle poolt inimesele omases omailmas tekitatavaid märgiprotsesse on siiski võimalik tuvastada ja analüüsida. Lähenedes katkendeile looduskirjandusest semiootiliste meetoditega, püüan näidata, kuidas linnuhääled võivad toimida eri tüüpi märkidena, nagu neid on eristanud Thomas A. Sebeok. Looduskirjanduse zoosemiootiline analüüs avab mitmeid huvitavaid perspektiive, mis traditsioonilisi kirjandusuurimise meetodeid kasutades jääksid ilmselt tabamata.