Metaphorical Extensions of Perception Verbs in English and Croatian: A Comparative Analysis

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Master's Thesis

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Zagreb, 2021

Sveučilište u Zagrebu

Filozofski fakultet

Odsjek za anglistiku

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METAFORIČKE EKSTENZIJE GLAGOLA PERCEPCIJE U ENGLESKOM I HRVATSKOM: KOMPARATIVNA ANALIZA

Diplomski rad

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Zagreb, 2021.

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Abstract

In recent years, universalist claims regarding the proposed hierarchy of verbs of perception, which suggest the primacy of verbs of seeing in terms of assuming meanings from the conceptual domain of cognition, have been faced with strong criticism. Namely, while it can hardly be argued that our experiences differ on the level of the stimuli we are exposed to, the linguistic data from languages across the world indicate that the way in which we interpret these experiences is anything but universal. The reasons for this disparity, while still in need of further investigation, seem to stem from the fact that the differences in how experience is interpreted and, subsequently, lexicalised by speakers of different languages might significantly depend on the differences in the socio-cultural background of the speakers. It is therefore the aim of this thesis to look at different ways in which the speakers of Croatian, and those of English utilise their sensory apparatus in order to interpret the world around them. To do so, a corpus analysis of metaphorical extensions of Croatian *vidjeti* and *čuti,* as opposed to English *see* and *hear*, respectively, was conducted. The results obtained from the analysis indicate that Croatian and English are quite similar in this respect, although with a few significant differences. These findings should therefore prove helpful in shedding further light on the differences and similarities between the two languages, as well as in testing the validity of certain claims that have been made so far about the nature of verbs of perception.

Key words: verbs of perception, metaphor, language and cognition, structure and meaning, polysemy

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1 Introduction

Ever since studies on verbs of perception in various different languages not belonging to the Indo-European language family have started to emerge, our understanding of that particular subject has changed significantly. It is becoming increasingly clear that much of what was once believed to be universal about the relationship between perception and language is in fact often language specific. Therefore, it is the primary aim of this study to look at differences and similarities regarding the way in which speakers of Croatian, and those of English, understand different sense modalities and their relationship to human cognitive apparatus, while the similarities and differences observed between the two languages will serve as the grounds for testing some popular claims that have been made so far about the nature of verbs of perception. To be more specific, this study is aimed at identifying the most common non-literal meanings that Croatian and English verbs of perception assume, while also, through these findings, testing the validity of the hierarchy proposed by Viberg (1983), who suggests that verbs of vision are more likely to extend their meaning into the domain of cognition than other verbs of perception are. Since Viberg primarily based his claims on the data from languages belonging to the Indo-European language family, it is assumed that the data from Croatian and English will correspond to his claims for the most part, but some differences are to be expected.

As regards distinguishing between the literal and non-literal meanings of verbs of perception, as well as distinguishing between a series of their non-literal meanings, especially in cases where semantics and subjective judgement failed, syntax, i.e. structure has been chosen as a more or less reliable indicator of semantic change. Therefore, this study will follow the tenets of cognitive grammar, or rather, to be more specific, construction grammar, which claims that the way in which a word is used depends on whether it is used metaphorically or non-metaphorically.

This thesis is structured so that the introduction is followed by the theoretical background of the study, outlined in section 2. Section 3 deals with how the data were analysed, as well as with the way in which the analysed sample was chosen, while the results are discussed in section 4, with section 5 being devoted to conclusions and general discussion.

2 Theoretical framework

2.1 Perception and cognition

In the last couple of decades, one on the most influential theoretical proposals in linguistics has certainly been that regarding conceptual metaphor, outlined by Lakoff and Johnson in their book *Metaphors We Live By*, published in 1980. Since then, scholars all around the world have picked up on their findings and expanded our understanding of the concept that they introduced. As a result, today conceptual metaphor is defined by cognitive linguists as the faculty of human beings to understand one conceptual domain in terms of another conceptual domain, whereas a conceptual domain is defined as a coherent organisation of experience (Kövecses and Benczes 2010). Furthermore, the conceptual domain through which another conceptual domain is understood is called the source domain, while the conceptual domain understood in this way is termed the target domain (ibid.).

As regards the properties of conceptual metaphor, as well as its role in language, two important claims, both of which served as the starting point for this study, have been made. Firstly, it has been claimed that there are certain metaphors that are universal across all human languages (Kövecses and Benczes 2010; Lakoff and Johnson 1980), and, secondly, conceptual metaphor has been described as being one of the main driving forces behind the semantic change (Haser 2000; Sweetser 1990). If both of these claims were to be accepted as valid, it could be hypothesized that certain semantic changes are also universal, and it is exactly these assumptions that have been made about verbs of perception. Namely, taking into account primarily semantic changes of verbs of perception in languages belonging to the Indo-European

language family, scholars such as Sweetser (1990) and Viberg (1983) have observed that it is exceptionally common, if not universal even, for verbs related to vision to extend their meaning into the conceptual domain of cognition. Attempting to account for such tendencies, Sweetser (1990: 38-39) provides the following explanations:

- The focusing ability of vision, i.e. the ability to focus on only one particular stimulus, is a salient property of both vision and thought.
- Vision is identical for different people.
- For humans, vision is the primary means of acquiring objective data about the world.

Therefore, based on such claims, it is assumed that other sense modalities will rarely extend their primary meaning into the conceptual domain of cognition, leading Viberg (1983: 136) to propose the following hierarchy of sense modalities as regards their reliability in terms of acquiring information and, therefore, the probability of having their meaning extended into the conceptual domain of cognition.

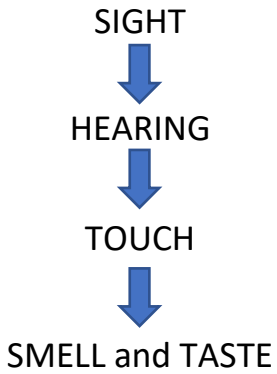

Figure 1. The hierarchy of sense modalities as proposed by Viberg (1983).

However, as has already been mentioned, such claims have recently been faced with a fair amount of criticism. First of all, in more general terms, linguists, such as Kövecses for example, have suggested that cognitive linguistics has "overemphasised the universality of some of the metaphorical structures that [it] found and ignored the many cases of non-universality in metaphorical conceptualisation" (2005: xii). Such conclusions consequently put

the entire premise about the proposed hierarchy of sense modalities into question. Indeed, when languages from more diverse cultural backgrounds are taken into account, it is found that no such or similar hierarchy could be considered universal across all languages. For instance, by analysing conversational data from 13 different languages, only three of which belong to the Indo-European language family, Roque et al. (2015) found that sight is not always considered to be the most reliable source of information. Similar observations were also made by Evans and Wilkins (2000), who, upon examining a body of conversational data compiled from various Australian languages, discovered that it is hearing in the majority of those languages that is the typical source domain through which cognition is understood. Unfortunately, studies dealing with verbs of perception as realised in Croatian are quite limited in number[1], which makes it very hard to draw general conclusions about the subject, although it should be expected for Croatian to be similar to other Indo-European languages in this respect. Nonetheless, in an attempt to put findings from non-Indo-European languages into context, as well as to discredit the universalist and Euro-centric claims made by some scholars, Tyler has stated the following:

> The hegemony of the visual… is not universal, for it: (a) has a history as a common-sense concept in Indo-European, influenced particularly by literacy; (b) is not "substantiated" in the conceptual "structures" of other languages; and (c) is based on a profound misunderstanding of the evolution and functioning of the human sensorium. (1984: 23)

Taking all this into account, Ibarretxe-Artuñano has proposed a revision of the model relating perception to cognition. Namely, instead of conceptual metaphors such as UNDERSTANDING IS VISION, which are limited to identifying one specific sense modality with one cognitive faculty, she stressed the importance of formulating the relationship between perception and cognition in more general terms, such as through the metaphor UNDERSTANDING IS PERCEPTION (2008:

[1] For such studies, see Čilaš Mikulić (2014), Kerovec (2016), and (Raffaelli 2017).

29). In other words, cognition should be regarded as a common target domain of all sense modalities, with various cultural factors determining which specific sense modality will be utilised the most in this respect by speakers of a given language.

2.2 Classifying verbs of perception

The sense modalities that are usually lexicalised in particular languages are sight, hearing, touch, taste, and smell, however there are numerous languages in which some verbs cover more than one of the listed sense modalities, resulting in the fact that not all of them are lexicalised as separate senses (Aikhenvald and Storch 2013; Viberg 1983). As far as Croatian and English are concerned, in both languages all five sense modalities can be classified as being lexicalised and are therefore, for the most part, expressed by sense-specific verbs (see Table 1 below). Additionally, another trait regarded as inherent to perception verbs is that of different perceptive events that they express. In this respect, Galac (2020), building upon Viberg (1983), distinguishes between two different categories of perception verbs – subject-oriented, characterised by the grammatical subject of the verb being the perceiver, as opposed to the object-oriented category, in which the grammatical subject of the verb is the percept, as is "This cake looks awful". Furthermore, both of these categories comprise different classes to which the verbs of perception belong. The object-oriented category comprises the percept class, exemplified above, while the subject-oriented category consists of the agentive and experiencer classes, wherein the former expresses active and intentional perception, as in "The kids are listening to the music", whereas the latter expresses perception that is inactive, as in "I saw a flash of light in the distance" (Galac 2020)[2]. Also important to mention is the fact that not all of these categories are necessarily lexicalised in terms of each class being expressed by a separate verb, as can be observed from Table 1, which lists the basic verbs of perception in English and Croatian, as categorised in terms of what has been said above. Lastly, this

[2] Examples provided by me.

categorisation is important because verbs expressing different sense modalities but belonging to the same class, such as *see* and *hear*, often behave in a similar manner. It is therefore important to keep such distinctions in mind since trying to draw general conclusions by comparing verbs of perception belonging to different classes would likely yield inconclusive and unreliable results.

Table 1. Basic verbs of perception in English and Croatian.[3]

ENGLISH						
category	**class**	**sight**	**hearing**	**taste**	**smell**	**touch**
subject-oriented	experiencer	*see*	*hear*	*taste*	*smell*	*feel*
	agentive	*look at*	*listen to*	*taste*	*smell*	*feel*
object-oriented	percept	*look*	*sound*	*taste*	*smell*	*feel*
CROATIAN						
category	**class**	**sight**	**hearing**	**taste**	**smell**	**touch**
subject-oriented	experiencer	*vidjeti*	*čuti*	*osjetiti*	*osjetiti*	*osjetiti*
	agentive	*gledati*	*slušati*	*kušati*	*njušiti*	*pipati*
object-oriented	percept	*izgledati*	*zvučati*	*biti* + adj.	*mirisati*	*biti* + adj.

2.3 Syntax as an indicator of semantic change

Since the main interest of this study are the differences and similarities between English and Croatian in terms of metaphorical extensions of verbs of perception, it was primarily concerned with the examples in which the select verbs were used in their non-literal meanings. What this means in practice is that a reliable mechanism for distinguishing between literal and

[3] The English model is taken from Evans and Wilkins (2000: 554), while the Croatian is proposed by me. It should be noted, however, that Croatian has specific experiencer-class verbs for expressing gustatory and olfactory sense modalities (*okusiti* and *njušiti*, respectively), but they seem to have, for the most part, fallen out of use in spoken language. This is also true for verbs belonging to the percept class, which are being replaced by copular constructions, as in "Ova pjesma je odlična", instead of "Ova pjesma zvuči odlično".

non-literal meanings, as well as between a series of different non-literal meanings, had to be devised, since semantics alone proved inadequate at times when used as a means for determining the more subtle differences in meaning. In formulating such a system, especially when it comes to distinguishing between the different non-literal senses of verbs of perception, syntax turned out to be of great use, since according to Gisborne, "[in] the case of verbs, the standard diagnostics of polysemy are complementation and collocation" (2010: 125). What is more, Gisborne devotes a section of his book to justifying his claim that "[a] verb's complementation patterns, its semantic selection restrictions, and its Aktionsart are all evidence for polysemy" (ibid.). In support of his opinion, he quotes authors such as Pinker (1989), who states that slight semantic distinctions between different verbs that share certain common features influence the syntactic patterns in which the verbs occur. Providing examples that justify his claims, Gisborne describes *see* as being non dynamic when used to refer to physical perception, resulting in the awkwardness of the sentence "*They are seeing *Guernica"*[4], while such construction becomes viable when used to refer to a sort of hallucination, such as in "They are seeing stars" (2010: 126). The argument that he makes based on this example is that, in instances such as the one given above, "the difference of aspect indicates a very real difference in meaning" (2010: 127), or, to put it in more general terms, the syntactic patterns in which verbs occur, as well as the complements that they take, can both be used as the grounds for determining the differences in meaning between the verbs, whether it be two or more different verbs, or two or more instances of the same verb.

Arguments about metaphor being influenced by structure are also in line with the tenets of construction grammar, one of which is that "every linguistic unit (which itself is in fact a kind of construction) contributes in some way to the meaning of the bigger construction of

[4] The example sentence, as well as the next one, is provided by Gisborne.

which it is a part"[5] (Stanojević 2013: 34). However, as Stanojević adds, the way in which a linguistic unit affects the meaning of the construction to which it belongs is neither predictable nor linear, since the meaning of the construction is barely ever a mere sum of the meanings of its constituents (ibid.). Therefore, to take the subject matter of this thesis as an example, it can be assumed that the syntactic structure in which a verb of perception appears might in fact be quite indicative of whether the verb has extended its meaning beyond the literal level. What is more, it is exactly this supposition that is supported by Stanojević in his detailed discussion on the subject of the relationship between metaphor and grammar, for, as he claims, constructional factors "show that the metaphorical usage of a given word will be grammatically different from its non-metaphorical usage"[6] (Stanojević 2014: 4). Lastly, as regards the grammatical category on which this study is focused, Stanojević (2014) cites several studies which point to the fact that in English, and quite likely in Croatian as well, verbs are more prone to being used metaphorically than are other parts of speech, which is, according to some studies (Evans and Wilkins 2000; Sweetser 1990; Viberg 1983), especially true for verbs of visual and auditory perception.

3 Methodology

3.1 Sample

Since the aim of this thesis is the qualitative analysis of the metaphorical extensions of select verbs of perception in English and Croatian, a corpus-based approach was chosen as the most appropriate means of research. The corpora chosen for this purpose included the Croatian Web corpus (hrWaC 2.2, ReLDI), and the English Web 2015 corpus (EnTenTen15), while Sketch Engine was used to extract data from them. A total of four samples were extracted, each

[5] My translation. The original: "...svaka jezična jedinica (koja je i sama zapravo neka vrsta konstrukcije) na neki način pridonosi značenju veće konstrukcije koje je dio".
[6] My translation. The original: "…pokazuju da će metaforička uporaba pojedine riječi biti gramatički različita od njezine nemetaforičke uporabe".

containing 250 random occurrences of one of the following verbs of perception – *vidjeti*, *čuti*, *see*, and *hear*. The reason why these particular verbs were selected is the fact that verbs denoting these two elemental sense modalities – vision and hearing – most frequently extend their meaning into the cognitive and various other domains, as has already been mentioned in section 2.3 above. Furthermore, in order for the results to be properly comparable, the selected verbs had to be parallel in terms of the class of perception verbs, as defined by Galac (2020), with the class chosen as the target of this study being the experiencer class. Therefore, since *see* is a verb of visual perception belonging to the said class, the verb of auditory perception belonging to the same class also had to be chosen, which is why *hear*, and not *listen*, was included in the study. Lastly, the same criteria also had to be taken into consideration when selecting the Croatian verbs, resulting in the fact that *vidjeti* and *čuti*, rather than *gledati* and *slušati* respectively, were selected.

3.2 Analysing the data

Regarding the analysis of the data acquired for the purposes of this study, as has been outlined in the preceding sections, first a sample of 250 tokens was extracted for each of the four selected verbs of perception. Then, each of the four samples was further divided with regards to tokens containing verbs used either in their literal sense or in a sense other than literal. Since syntax was also taken into account when distinguishing between the two groups (literal and non-literal), as well as between the various non-literal meanings of the verbs, the tokens were also coded in terms of general grammatical features of the verbs of perception that appear in them, i.e. in terms of tense, aspect, and mood. However, in future and more detailed studies of the subject, all the features of the verb should be taken into account, along with the type of its complementation since even the slightest differences in structure have shown to be significant in terms of verbs extending their meaning beyond the domain of the original one. However, such a fine-grained analysis unfortunately goes beyond the intended scope of this

study. Lastly, once the tokens were coded for the verbs' grammatical features, as well as for being literal or non-literal, the non-literal instances were further divided into groups depending on the meaning. To shortly illustrate how coding of tokens looked in practice, a few examples are given in the table below.

Table 2. Analysing the data – examples.

Example sentence	Literal	Grammatical category	Meaning
The figures released today show that people who have been in work for a year or more **have seen** their wages go up by 4%.	No	Present perfect	Experiencing
And I was reminded of if again yesterday when I **saw** this post from Ann Althouse.	Yes	Past simple	Seeing
E, vidiš, to sam želio **čuti**.	Yes	Non-finite	Hearing
Čuj, tu nema puno rasprave.	No	Imperative	Paying attention

4 Results

Once the coding of the sentences was completed, the data was analysed in terms of the frequency of particular meanings. All meanings identified in this study, as well as their counts, are given in Table 5 which is located in the Appendix at the end of the thesis. However, before drawing conclusions from the identified non-literal meanings that the verbs assumed, some remarks need to be made regarding the number of occurrences in which the verbs appear in their literal meanings, as opposed to those in which they assume non-literal meanings, which is the issue discussed in the following section.

4.1 Ratio of literal vs. non-literal occurrences

As is seen in Table 3 below, the sample for each of the four verbs included 250 different tokens. However, some of the tokens turned out to be examples of coding error and were therefore excluded from further analysis, which resulted in the *hear*-sample having 247

analysable tokens, while 4 tokens were excluded from the samples of *see* and *čuti*. As far as the ratio of literal and non-literal meanings in the samples is concerned, English and Croatian seem to be quite similar in this respect. Namely, the ratio of literal and non-literal usages of auditory verbs is almost exactly 50-50% in both languages, while the verbs expressing visual perception tend to be used more frequently in their non-literal meanings, with the Croatian sample giving the ratio of 60,8-39,2% in favour of non-literal meanings, and the English sample giving the ratio of 58,54-41,46%.

Table 3. Ratio of literal vs. non-literal occurrences identified for verbs of perception.

	Total	**Literal**	**%**	**Non-literal**	**%**
See	246	102	41,46	144	58,54
Vidjeti	250	98	39,2	152	60,8
Hear	247	124	50,2	123	49,8
Čuti	246	122	49,59	124	50,41

Such a high incidence of non-literal usages of verbs of perception, along with a high number of different meanings that they assume, as is seen in Table 4 below, corroborates previously made claims about verbs of perception being highly polysemous (Evans and Wilkins 2000; Sweetser 1990; Viberg 1983), just as it speaks in favour of observations that verbs are more commonly used to convey metaphorical meanings than are other parts of speech (Stanojević 2014). However, just as they seem to assume non-literal meanings more frequently than auditory verbs do, verbs of vision also seem to do so in a more diversified way, as is evidenced by the fact that eight and ten different meanings have been identified for *see* and *vidjeti,* respectively, seven of which are shared between the two, while *čuti* and *hear* were found to assume six different meanings each, five of which they share. As is also evident from Table 4, only a couple of non-literal meanings are shared between auditory verbs and verbs of vision, which is strongly indicative of the fact that they are understood by speakers in significantly

different ways, even though they are both used to talk about perception. Lastly, both in terms of the ratio of literal vs. non-literal occurrences and of the number of different non-literal meanings assumed, there seems to be little difference between Croatian and English, which is quite interesting to note, given the relatively small sample analysed, in which more variation is to be expected.

Table 4. Number of identified non-literal meanings for verbs of perception

<table>
<tr><td></td><td>Total number of meanings</td><td colspan="3">Shared meanings</td></tr>
<tr><td>See</td><td>8</td><td rowspan="2">7</td><td></td><td></td></tr>
<tr><td>Vidjeti</td><td>10</td><td rowspan="3">1</td><td rowspan="3">1</td></tr>
<tr><td>Čuti</td><td>6</td><td rowspan="2">5</td></tr>
<tr><td>Hear</td><td>6</td><td></td></tr>
</table>

4.2 Sight as the more reliable source of experience

There are several points to be taken based on the data acquired from analysing the non-literal meanings assumed by the selected verbs of perception, with the first one being that in both languages sight seems to be considered a more reliable source of evidence. Consider, for instance, the following sentences.

(1) (a) Po onome što se moglo **čuti**, okupljene vinogradare najviše je zanimalo kada i na koji način ocijeniti optimalno početak berbe.

(b) In the prison, **did** you **hear** anything about the Muslims who were detained and tortured?

(2) (a) Trebalo bi **vidjeti** kakav pomak, ako ga ima, postoji u tim zemljama.

(b) We're waiting **to see** what the Senate can or can't do, and then we'll make decisions about how we're going to proceed.

In sentences (1a) and (1b), verbs *čuti* and *hear* have been classified as conveying the meaning of "finding out". In this respect, they refer to instances where the information that is being

perceived is new and previously unknown to the hearer. However, in such cases, it is usually either simpler information that is being acquired through hearing (such as individual requests by farmers in (1a)), or it is basic information about more complex issues (such as hearing *anything about* detainment and torturing of prisoners in (1b)). Therefore, it can be concluded that in both English and Croatian hearing is understood as a means of acquiring new information, however information obtained in such a way is often basic and undetailed. On the other hand, while sentences (2a) and (2b) are also focused on obtaining information, verbs of vision in them are used in the sense of obtaining detailed and conclusive information, as well as information on which the course of future decisions might depend. This is especially evident in sentence (2b), where making decisions based on the seen information is even explicitly mentioned, while sentence (2a) could also be interpreted in the same way, although more context is needed. Nonetheless, as has already been said, both of these sentences refer to obtaining conclusive information about subjects in question, which is why they have been classified as conveying the meaning of "ascertaining". Furthermore, as is exemplified by (2a) and (2b), almost all the examples where *see* and *vidjeti* assume the meaning of *ascertain* the object of the verb is an interrogative clause[7], which could be interpreted in terms of speakers considering the act of seeing as providing reliable answers to their questions and uncertainties. Therefore, taking what has been said so far into account, it is safe to say that Viberg's (1983) claims about vision being a more reliable source of information than hearing are true when it comes to data from English and Croatian. This is also supported by that fact than in English, however not in Croatian, *see* has also in some cases acquired the meaning of "ensuring", wherein seeing something is understood as being sure that it happened. This association in turn enables speakers to imagine seeing as making sure that what is being seen is brought into

[7] In English if-clauses are also very common in this respect, such as in "I'll give it a chance more to see if it's as deep as they say."

existence. This well-known and documented development has been identified in sentences such as the one given below.

(3) (a) I think Political Leaders have a role to play - and that is **to see** that contracts within their jurisdiction are well implemented.

4.3 Seeing is understanding, hearing is knowing

Even though semantic developments mentioned in the previous paragraph all speak in favour of the theory about verbs of perception being organised as a hierarchy with verbs of vision at the top as the most reliable evidential (Viberg 1983), the data from this study suggest that some other claims about the nature of verbs of perception could be misleading. The following examples should help in illustrating this point.

(4) (a) And the people that **haven't heard** of the Peles castle must have been either tourists or non-English speakers.

(b) A ja **sam čuo** za jednu ruralnu legendu a to je rakija kokošara.

In both the English and Croatian samples, there are about 20 instances in which the auditory verb was classified as conveying the meaning of *know*, as is the case in the two sentences above. However, it is interesting to note that all of those instances can be divided into two groups. The first group, illustrated by sentence (4a), contains only those instances in which the auditory verb was negated, while the second group, exemplified by sentence (4b), comprises the cases in which the knowing goes little beyond the level of basic, or rather partitive knowledge, which is evidenced by the fact that sentences from the second group contain constructions such as "hear of/about" or "čuti za". Therefore, while auditory verbs are used to denote "knowing", such uses are limited to two special cases – the one in which the knowing is limited, and the one in which the knowing can be considered complete, but only because there is nothing that is known. It should also be added that *hear* assumes the meaning of *know*

only in those cases in which it appears in the perfect aspect, while Croatian *čuti* does so only when the verb is used in past tenses. Therefore, in order for auditory verbs to express knowing in the two languages, the act of hearing obviously has to be completed, which might be understood in terms of the information acquired through hearing being processed and evaluated in its entirety. These findings contradict the claims made by Sweetser (1990), which is one of the more influential studies on the subject of verbs of perception, who stated that "hearing is connected with the specifically communicative aspects of understanding, rather than with intellection at large. (It would be a novelty for a verb meaning 'hear' to develop a usage meaning 'know' rather than 'understand', whereas such a usage is common for verbs meaning 'see')" (1990: 43). However, the evidence presented here points in a significantly different direction, with the verbs related to vision demonstrating barely any instances in which they were used in the sense typically associated with *know*. Namely, only three such cases have been identified and are all limited to the Croatian sample. Yet again, all of those cases are limited to a specific syntactical pattern, wherein "vidim" is preceded by "već (sad)", as can be seen in the following example.

(5) (c) Već sada **vidim** da će mi financije biti glavni problem jer kako god uštedim koju kunu tako mi neki novi trošak iskrsne.

Because this semantic development is limited to constructions such as "već (sad) vidim", *vidjeti* is in such cases primarily used to express predictions about future events. However, since this construction is used to talk about the speakers' strong convictions regarding what will happen in the future, i.e. the speakers are not claiming that something might happen, but are sure that it will, this has been classified as "knowing", rather than "predicting".

Unlike "knowing", which appears only in Croatian and in a handful of cases, a much more common semantic development of verbs of vison has been identified in both English and Croatian, further refuting Sweetser's claims. Namely, contrary to her claims that it is

uncommon for *hear* to mean *know*, just as it is uncommon for *see* to mean *understand* (1990: 43), verbs of visual perception have been found to appear exactly in this sense, while no such instances were identified for auditory verbs. However, it should be noted that, while absent from the samples extracted for the purposes of this study, such a development does exist for the English auditory verb, as in, for example, "I hear you."[8] On the other hand, it is not possible to use *čuti* in that way in Croatian. The examples in which *see* and *vidjeti* assume the meaning of *understand* in the two languages can be seen below.

(6) (a) Ne **vidim** na koji način ovo dokazuje da 11. rujna nije teroristički čin, već da je u pitanju urota?

(b) I can **see** how the uneducated might be willing to do violent and passionate things under the influence.

Although not acknowledged by Sweetser, this usage of *see* and *vidjeti* is well attested in dictionaries, such as in Merriam-Webster online dictionary, Cambridge Dictionary and Hrvatski jezični portal, which makes it quite surprising that she dismissed this as unusual and uncommon. What is more, her claims are refuted here by the data from languages belonging to the Indo-European language family, i.e. the language family which served as the basis for her universalist assertions about the way in which perception is reflected in language.

4.4 Seeing as the physically closer experience

Another property also shared by English and Croatian has to do with the stereotypical proximity of the perceived object. In this respect, speakers of both languages seem to consider sight as a physically closer experience than hearing, which can be observed from the examples that follow.

[8] The fact that no such examples were found in the samples is probably due to this pattern being typical of spoken language.

(7) (a) Mi smo ipak sestre. Sestre koje se nisu **vidjele** sedam godina.

(b) I was so terrified that I would never get **to see** you again.

(c) **Čuo** sam se s drugim gradovima i evo nitko nije rekao kako je završio...

(d) If you can relate to any of these scenarios, we'd like **to hear** from you.

The reason why examples such as (7a) and (7b) have been classified as "meeting" is the fact that in the mind of speakers of Croatian and English seeing is obviously associated with being close to the object that is being observed, which can be considered a case of metonymy, since seeing a person is here taken to stand for the entire experience of meeting with them. Therefore, it is this perceived closeness that enables the speakers to extend the meaning of verbs of visual perception into the domain of being close to someone or, to be more specific, into the domain of meeting (with) other people. Furthermore, even though perceiving someone both visually and auditorily is considered as establishing contact with that person, as sentences (7c) and (7d) show, people contacting each other via hearing are stereotypically understood as being much more physically distant then are the people establishing contact via sight. In other words, when someone is seen it is often the case that they can be heard, and perhaps even touched, while the person that is being heard is not necessarily understood as also being seen, at least as far as speakers of English and Croatian are concerned. Therefore, cases exemplified by (7c) and (7d) have been classified as "contacting". However, it would be interesting to look at historical data and see if such a development preceded new communication technologies or appeared concurrently with them, which could possibly indicate to the fact that the new technologies have affected the way in which people interpret different modes of perception. Lastly, it should also be added that instances in which verbs of hearing appear in the sense of "contacting" are limited in terms of syntactical patterns that they take. Namely, in all such cases, Croatian *čuti* appears in the pattern "čuti se sa", while its English counterpart follows this model and appears exclusively in the pattern "to hear from".

4.5 Being heard is being present

One of the more interesting and unexpected semantic developments, although not a common one, shared by both English and Croatian, is the fact *hear* and *čuti* have come to be used as existential verbs. Although it might be surprising for verbs of perception to be used in such a way, it could potentially be explained in terms of metonymy. The following examples, which have been classified as "being present", should help in making this argument clearer.

(8) (a) Such a dereliction of all faith and virtue, such a denial of justice, and such deafness to screams for mercy were never **heard** of in times of peace and in the dealing of a nation with its own allies and wards, since the earth was made.

(b) Ne **čuje** se ni glas prava na svoj nacionalni hrvatski teritorij…

As is seen in sentences (8a) and (8b), and just as was the case with "knowing" mentioned in paragraph 4.3 above, negation is once more utilised by speakers of English and Croatian to extend the meaning of perception verbs beyond the literal level, this time in the way that something that can't be heard is consequently understood as not existing. Such understanding is made possible through metonymy, since not being heard stands for not being perceived in general, which in turn stands for not being present, thus resulting in a chain of metonymies. However, in the Croatian sample there is also one instance where the opposite is true, i.e. something that is heard is interpreted as being present/existing[9]. Lastly, it should also be noted that all of the instances in which this meaning occurs are constructed either in the passive voice (English), or with a reflexive pronoun (Croatian). This results in the fact that the object of hearing, be it extant or not, is framed in terms of the subject of an existential verb, the meaning of which is assumed by a verb of auditory perception.

[9] The example, although of questionable political correctness, reads as follows: "Sve dok se **čuju** ovakva razmišljanja, navijam za sve manju Srbijicu".

4.6 Verbs of perception changing classes

So far, the results of this study have proven Viberg's (1983) proposed hierarchy of verbs of perception to exist in English and Croatian, while Sweetser's (1990) claims about the typical semantic developments of auditory verbs and verbs of vision have proven incorrect for these two languages. Dissimilar from the first two examples, which are either strongly supported or refuted, another claim about the nature of the verbs of perception seems to both follow and contradict the findings of this study. Namely, by means of a contrastive historical analysis in six major European languages[10], Galac found transitions between the three classes of verbs of perception (agentive, experiencer, percept) to be rare, but not infrequent in English (2020: 134). As an example of such change he lists *look*, which he describes as having historically transitioned from belonging solely to the agentive class to belonging to both the agentive and percept classes, as is the case today (ibid.). As far as his claims about English are concerned, they are supported, although indirectly, by the fact that auditory verbs and verbs of visual perception have been found in this study to assume the meaning of "consulting" and "acknowledging", respectively. This is illustrated in the sentences below, with examples (9a) and (9b) being classified as "consulting", while examples (10a) and (10b) have been classified as "acknowledging".

(9) (a) **Vidi** pod ŽENSKO.

(b) **See** the illustration below…

(10) (a) Ja ni da **čujem** o nekakvom vraćanju, te se onda borim još dobrih pet minuta s njom i molim je da mi ne pravi scenu.

(b) The Bridge is a support system – it's a place **to be heard** … and it offers the assistance to realize and attain personal goals.

[10] English, German, French, Spanish, Italian, Hungarian.

The reason for claiming that these findings support Galac's argument about English verbs of perception commonly changing classes lies in the fact both "consulting" and "acknowledging" are meanings in which the speaker, i.e. the perceiver in our case, has certain agency and control over what they are doing. This in turn means that it should be expected of agentive-, rather than experiencer-class verbs of perception, such as *gledati* and *look*, or *slušati* and *listen,* to assume such meanings. However, as is evidenced above, it is actually the verbs of perception belonging to the experiencer class that have assumed these agentive meanings. This can therefore be interpreted as experiencer-class verbs of perception changing classes, or at least assuming some characteristics of another, in this case agentive class.

On the other hand, the evidence presented above seems to contradict Galac's claim that, at least in terms of the languages that he studied, it is rare for verbs of perception to change classes. His claims seem especially problematic if we are to take into account the fact that they rely on historical data ranging a few hundred years, while here we have seen several similar developments happening concurrently. What is more, there is another such development, however specific to Croatian, that further corroborates the argument that verbs of perception changing classes is not at all uncommon. This development can be observed in examples below, where Croatian *čuti* and *vidjeti* in (11a) and (11b) have both been classified as "paying attention".

(11) (a) **Čuj**, nova sam u ovom žanru, tako da je svaka sugestija dobrodošla.

(b) **Vidi**, **vidi**, Index opet ima pametnu temu za raspravu…

In both of these cases, the speakers are using verbs of perception in the imperative mood in order to draw attention from their listeners. What is more, in the great majority of cases where verbs of perception appear in the imperative mood, they have become lexicalised as discourse markers, which is a well-known phenomenon (Aikhenvald and Storch 2013). However, what is interesting to note here is the fact that this semantic shift is typical of verbs of perception

belonging to the experiencer class, such as English *look* and *listen*. This, as is illustrated by (11a) and (11b), is not the case in Croatian, in which verbs of perception belonging to the experiencer class can be described as assuming the properties of their agentive counterparts[11].

To sum up, contrary to what could be deduced from Galac's (2020) claims about verbs of perception rarely switching classes, both English and Croatian verbs of perception belonging to the experiencer class have been shown to be quite fluid in terms of the class to which they belong, i.e. in terms of assuming properties of classes other than their primary one. It is therefore surprising that Galac (2020) found little evidence of class shifting among verbs of perception in six major European languages, since the findings of this study seem to indicate that the boundaries between the classes are much less rigid that previously believed. If that really is the case, further studies are needed to determine whether Galac's claims are correct and, if they are, why is it that verbs of perception change classes so infrequently.

4.7 Similarities and differences between Croatian and English

One of the first things that was said about the nature of verbs of perception in English and Croatian, as presented in the findings of this study, is that verbs of perception in those two languages seem to behave in a surprisingly similar way. This is evident from Table 3, which gives ratios of literal and non-literal occurrences of verbs of perception, which are almost the same in the two languages, just as it is evident from Table 4, which shows that the number of non-literal meanings assumed by verbs of perception in the two languages is very similar, with most of those meanings shared between the corresponding verbs. Taking all this into account, a question is inevitably raised as to why it is that the two languages are so similar when it comes to the way in which human sensory apparatus is utilised to describe and talk about the world in

[11] Such development, although a pretty marginal one, has also been identified in English, where *hear* is sometimes used to express agreement, as in "**Hear**, **hear** to that". This can be interpreted as the speaker calling for the listeners' attention, which in turn stands for the speaker expressing support for, and agreement with what someone else is saying. Since the primary purpose here is expressing agreement, the two such cases that appeared in the sample have been classified as "agreeing".

general. As one might have noticed, a possible answer to this question has been hinted at several times in previous paragraphs. Namely, based on the evidence presented in this study, it is the structural parallelism between the two languages that can be said, however not entirely, to account for the similarities in the way in which verbs of perception from the two languages extend their meaning beyond the literal level. Supporting this argument is the fact that there are several identified non-literal meanings in which the verbs occur that almost exclusively appear in specific grammatical structures. Those meanings, given in the order in which they are discussed in the preceding paragraphs, are the following:

1) Ascertaining – Assumed by verbs of visual perception in both languages. Almost entirely exclusive to cases where the object of the verb of perception is the interrogative clause (and also if-clause in English).
2) Knowing – Identified primarily for *čuti* and *hear*, however only in cases where verb is negated or in constructions "čuti za" and "hear about/of". *Hear* assumes this meaning only in perfect aspect, while *čuti* does so only in past tenses.
3) Contacting – The meaning assumed by auditory *čuti* and *hear*, however only in constructions "čuti se sa" and "to hear from".
4) Consulting – A development typical to verbs of visual perception, appearing only when they are used in the imperative mood.
5) Paying attention – The meaning identified only for the Croatian verbs of perception, present only when the verbs appear in the imperative mood.
6) Considering – A meaning not discussed so far, typical to *vidjeti* and *see*, but appearing almost exclusively when the object of the verb of perception is a prepositional phrase headed by *as*, in English, and *kao*, in Croatian.[12]

[12] The sentences from the corpus that have been classified under this category are exemplified below.
(a) Unatoč dobroj ponudi, splitski se pjevač još uvijek ne **vidi** kao pjevačka zvijezda.

All of the meanings that have been mentioned above, except for "paying attention", appear in both English and Croatian. What is more, the number of their occurrences is almost equal between the two languages, which is quite remarkable.

On the other hand, while structural similarities have been shown to correspond to the way in which English and Croatian verbs of perception behave, the same can also be said for the differences between the languages. Perhaps the best example to illustrate this point is the meaning of "acknowledging", which is assumed by both *čuti* and *hear*, but is significantly more common in English. This can be accounted for by the fact that *hear* predominantly assumes this meaning when used in the passive voice, which, although present in Croatian, is much less used than in English. Therefore, to conclude, Croatian and English have been shown to be quite similar in terms of the way in which verbs of perception are utilised by their speakers, while both the similarities and differences between the two languages can for the most part be accounted for by structural parallelism, or lack of it thereof.

5 Discussion and conclusion

The first conclusion that can be drawn from the data about the analysed verbs of perception is that speakers of English and Croatian understand their sensory apparatus in a remarkably similar way. Therefore, non-literal meanings in which the selected verbs appear are almost all the same between the two languages, with some minor exceptions. The same can also be said for the number of the verbs' literal and non-literal occurrences, wherein both visual and auditory verbs from the two languages have shown a high tendency towards assuming non-literal meanings, which is in line with some previous arguments regarding this subject (Evans and Wilkins 2000; Stanojević 2014; Sweetser 1990; Viberg 1983).

(b) This phenomenon can **be seen** as an example of recency effect…

As was shown in section 4.2, the languages are also similar in that their speakers consider sight to be a more reliable source of information than hearing is, which is reflected in the fact that visual verbs tend to assume the meaning of "ascertaining" and "ensuring", while auditory verbs are used to convey the meaning of "finding out". This characteristic is also typical of other major Western languages (Sweetser 1990) and is in line with Viberg's (1983) proposed hierarchy of perception verbs which put verbs of vision at the top as the most reliable source of experience. However, it speaks little about the universality of his claims. What is more, contrary to previous claims about the nature of perception verbs (Sweetser 1990), in English, just as in Croatian, the verb of hearing belonging to the experiencer class has extended its meaning into the domain of knowing. Although such instances are limited to a certain set of syntactical patterns, as was shown in 4.2, this strongly indicates to the fact that the rules regarding verbs of perception are not just language-, or rather culture-specific, but are also much less rigid than previously believed. Namely, while both Croatian and English follow the model in which vision is understood as primary means of acquiring reliable information, in both of the languages (although there are certain exceptions in Croatian) the pattern in which the basic verb of sight extends its meaning into the domain of knowing has been bypassed in favour of verbs related to the sense of hearing.

Furthermore, as was elaborated in section 4.4, the two languages are also similar in that sight is understood as being a much closer experience than hearing in terms of the stereotypical physical distance from which it occurs. However, it is also suggested that further analyses of historical data are needed in order to determine whether the technological development has had any significant impact on such understanding of sight and hearing. Lastly, the languages also share perhaps the most interesting semantic development, wherein being noticed is understood as being present, which results in verbs of perception being used as existential verbs, as was described in section 4.5.

As far as accounting for the similarities between the languages is concerned, it seems that they can for the most part be explained in terms of the structural similarities between the languages. While, on the other hand, the differences in the way in which verbs of perception in the two languages are understood seem to be followed by the differences in structure among the two languages. Furthermore, such observations are supported by construction grammar, which, among other things, claims that differences in structure are inherently linked to differences in meaning (Stanojević 2013; 2014). However, future studies will have to pay close attention to even the slightest syntactic specificities of the patterns in which the observed lexemes occur, which is something that this study has done only partially.

Lastly, in general terms, this study will hopefully contribute to the understanding of the relationship between the English and Croatian languages, as well as to the understanding of verbs of perception in general, especially when it comes to the Croatian lexicon of perception, since there are only a handful of studies dealing with this particular subject (Čilaš Mikulić 2014; Kerovec 2016; Raffaelli 2017).

6 References

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7 Appendix

Table 5. Quantitative analysis of meanings assumed by visual and auditory verbs of perception in English and Croatian.

	SEE	**246**	**VIDJETI**	**250**	**HEAR**	**247**	**ČUTI**	**246**
1.	seeing	102	seeing	98	hearing	124	hearing	122
2.	x	0	knowing	3	knowing	20	knowing	22
3.	x	0	paying attention	4	x	0	paying attention	16
4.	x	0	x	0	finding out	64	finding out	71
5.	x	0	x	0	acknowledging	21	acknowledging	6
6.	x	0	x	0	being present	1	being present	3
7.	x	0	x	0	contacting	15	contacting	6
8.	x	0	x	0	agreeing	2	x	0
9.	meeting	7	meeting	15	x	0	x	0
10.	ascertaining	31	ascertaining	38	x	0	x	0
11.	noticing	20	noticing	56	x	0	x	0
12.	experiencing	33	experiencing	5	x	0	x	0
13.	considering	17	considering	11	x	0	x	0
14.	understanding	12	understanding	10	x	0	x	0
15.	consulting	19	consulting	4	x	0	x	0
16.	x	0	visiting	6	x	0	x	0
17.	ensuring	5	x	0	x	0	x	0