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COLOR VERBS IN CROATIAN

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1. INTRODUCTION

As the title suggests, the subject of this thesis are verbs of color in Croatian. The choice of topic has been motivated by two reasons. First, in spite of their small number and relatively low frequency, Croatian color verbs exhibit some peculiar characteristics. They appear in a large number of forms that express different, yet similar, meanings and seem to form a subsystem of their own within the wider system of verbs. The second motivation is the fact that this topic, as much as I am aware, has not been touched upon in literature. This is the reason why I have decided to take a rather general approach to the subject. The aim of the thesis is to provide insight into the Croatian system of color verbs from a grammatical and lexico-semantic standpoint.

The thesis consists of two main parts. The first part introduces the general notion of color verbs and gives an overview of such verbs in Croatian. It focuses on the main syntactic, semantic and morphological features of color verbs, regardless of whether they are unique or shared with other verb classes. The second part is dedicated to a corpus analysis of selected color verb groups. Each group is defined on the basis of the color adjective that serves as the source for the derivation of the verbs within the group.¹ The analysis is further divided into two parts. In the first part color verb groups are analyzed individually in order to identify the different repertoires of forms and meanings that are available to each of them. The second part, titled *Comprehensive Analysis*, is concerned with similarities and differences **between** color verb groups and aims to identify the regularities that make up the color verb system.²

¹ The selected adjectives, which represent some of the most basic colors, are: *zelen* 'green', *žut* 'yellow', *crven* 'red', *plav* 'blue', *bijel* 'white', and *crn* 'black'.

² The collected and analyzed concordances from the corpus were supposed to be added to the thesis as an appendix. However, the program Bonito used to access the Croatian National Corpus exports concordance lists in a file type that I was not able to adequately convert to a Word or PDF file. Readers interested in the source material can contact me at bornabaradic@yahoo.com.

2. PART ONE

Overview of color verbs in Croatian and English

2.1 GENERAL OUTLINE

As their name suggests, color verbs denote processes related to color. They obtain their form and meaning from basic color words, namely adjectives, such as *white*, *blue* or *yellow*.³ In Croatian this is achieved by **derivation**, more precisely, by adding affixes to the adjective. The possibilities of derivation are plentiful and enable the production of various different color verbs. For example, the adjective *žut* ‘yellow’ produces the verbs *žutjeti*, *žutiti*, *požutjeti*, *zažutjeti*, *ožutiti*, etc.⁴ A similar, yet more limited, situation, is found in Spanish: *amarillo* ‘yellow’ gives *amarillear*, *amarillecer*, *enamarillecer* and *enmarillecer* (Rello, 2009).⁵ In English the boundaries between parts of speech are more flexible. Color words of different kinds can be differentiated by means of suffixes (*black*, *blackness*, *to blacken*) or can have the same grammatical form, due to the possibilities of **conversion** (*yellow*, *the color yellow*, *to yellow*).

Naturally, color verbs inherit the meanings of color adjectives, adding to them a verbal notion. This notion generally implies a process of change of color that can be conceptualized as caused internally or externally. Compare the sentences: *The clothes bleached in the sun*, *He was so scared his face whitened* and *Storm clouds blacken the sky*, *The frost reddened his cheeks*. The absence or presence of an external agent is reflected in the syntactic structure of a sentence and can be coded differently, depending on the language.⁶ Furthermore, in addition to denotative meanings of colors, rooted in real-world visual perception, color verbs can also inherit the metaphorical, more culturally dependent, meanings attributed to certain colors.

³ Sometimes also from nouns.

⁴ The differences between the varieties will be explained later in the text.

⁵ Rello defines these verbs in the following way: *amarillear* (intransitive) ‘become yellowish’, *amarillecer* (intransitive) ‘become yellow’, *enamarillecer* (intransitive or pronominal) ‘become yellow’, *enmarillecer* (pronominal) ‘become discolored and yellowish’ (used pejoratively).

⁶ See next section.

Such is the case of the English verb *to blacken* and the Croatian equivalent *ocrniti* in their meaning ‘to slander, to defame’.

In spite of the existence of color verbs and the relatively high number of their varieties in languages such as Croatian, their overall frequency in a language tends to be low. On the one hand, possible contexts for the use of color verbs are rather limited. On the other hand, in many contexts speakers prefer to use alternative periphrastic constructions over color verbs. An example is given in *Table 1*.

Table 1

COLOR VERB		PERIPHRASTIC CONSTRUCTION	
<i>to blue</i>	<i>*He blues the door.</i>	<i>to paint/dye</i> + COLOR	<i>He paints the door blue.</i>
<i>plaviti</i>	<i>Plavi vrata.</i>	<i>bojiti u</i> + COLOR	<i>Boji vrata u plavo.</i>

The use of analytic constructions is further reinforced by the fact that many color adjectives do not have a verbal counterpart, such are *beige*, *olive* or *aquamarin*, and their equivalents in Croatian *bež*, *maslinast* and *akvamarin*. There are, however, differences in frequency between the languages, with Croatian having a much wider use of color verbs than English. This will best be seen in the corpus analysis part of the thesis.

2.2 SYNTACTIC FEATURES

The current section is concerned with transitivity and argument structure of color verbs. First, it presents the situation in English and then continues to give a description of how the corresponding structures are realized in Croatian.

English color verbs are classified under the category of **verbs of change of state** (Levin, 1993; Francis, Hunston & Manning, 2008). Such classification highlights their basic semantic property, the fact that the verbal action involves a change of state of an entity, but consequently it also has repercussions on their syntactic behaviour. The main issue here is the notion of **lexical ergativity**. Color verbs and most other change of state verbs allow for ergative constructions and, for that reason, can be defined as **ergative verbs**. In the COBUILD Grammar Patterns 1: Verbs (Francis et al., 2008) ergative verbs are treated as a

separate class of verbs, while in the Levin's *English Verb Classes and Alternations* (1993) ergativity is defined in terms of the causative/inchoative alternation, which is shown to be characteristic to some of the analyzed verb classes. *Table 2* presents the classification schemes from both sources and a listing of all the contained color verbs.

Table 2

COBUILD (2008)	Levin (1993)
ergative verbs	verbs of change of state
↓	↓
groups of verbs concerned with change	other alternating verbs of change of state
↓	(demonstrating <i>causative/inchoative</i>
'bleach' group	<i>alternation</i>)
	↓
	change of color verbs
<i>blacken, bleach, brighten, darken, deepen,</i>	<i>blacken, brown, crimson, gray, green, purple,</i>
<i>dim, discolour, fade, lighten, redden, whiten</i>	<i>redden, silver, tan, whiten, yellow</i> ⁷

It is now necessary to give an explanation of what ergative verbs are. For our purposes, a short explanation will be sufficient. Ergative verbs allow for an alternation between a 1-participant and 2-participant construction while having the same participant as object in the 2-participant construction and subject in the 1-participant construction. The form of the verb does **not** change. In this regard, they differ from transitive constructions, that can be **passivized**, but the change of argument structure entails a change of verbal form. An example of an ergative verb is *to break*. A sentence like *John broke the vase* can be transformed in such a way that the patient in the sentence becomes the agent, without a change in form: *The vase broke*. This is not possible with a transitive verb like *to read*: *Jane read the book* > **The book read*. It is, however, possible to passivize the sentence: *The book was read (by Jane)*,

⁷ As can be seen, the two lists do not neatly overlap. The verbs that appear in the COBUILD 'bleach' group but are not found among Levin's color verbs either do not have a subcategory (*fade*) or are listed in the *-en* subcategory (*brighten, darken, deepen, lighten*). On the other hand, some verbs from Levin's list are not found in the COBUILD Grammar Patterns, while the verb *to brown* is listed in the 'cook' group.

and the same can be done with the ergative verb: *The vase was broken (by John)*.⁸ The difference between the passive and the ergative 1-participant construction lies in the fact that the agent is always implied in the passive, and can, therefore, be introduced by a *by*-phrase, while it is not conceptually present in the ergative. In Heidinger & Schäfer's (2010) words: „in the case of a passive the external argument is only suppressed but still present on the verb's argument grid while the external argument is completely deleted from the verb's argument grid in the case of anticausatives.“⁹ Finally, intransitive verbs do not allow either construction: *The baby fell on the floor* > **The floor fell the baby*, **The baby was fallen (by the floor)*.

In the terminology adopted by Levin (1993) the 1-participant construction is called **inchoative**, while the 2-participant construction is called **causative**. Ergative verbs alternate between the two constructions. The inchoative construction denotes a process of **becoming** of a certain color: *The skin tans* < *The skin becomes tan*. The causative construction involves an agent who **causes** the entity to change color: *The sun tans the skin* < *The sun causes the skin to become tan*.

In the next step we will analyze the situation in Croatian, which is very different. While in English the number of ergative verbs is relatively large and shows signs of expansion (Andrew, 1996; Davidse & Geyskens, 1998; Michael, 1994), in Croatian they are few. They do not represent a systematic feature of the language but rather a sporadic phenomenon. Some Croatian ergative verbs are *započeti* 'to begin, to start', *završiti* 'to end, to finish', *usporiti* 'speed up' and *ubrzati* 'slow down'. An illustrating example would be *Profesor započinje sat* 'The professor is starting the class' > *Sat započinje* 'The class is starting'. However, in the vast majority of cases the ergative 1-participant construction in English corresponds to the reflexive passive construction in Croatian.¹⁰ In other words, the verb **has** to be modified if we want to make the patient of a 2-participant clause the agent of a 1-participant clause. The reflexive passive is formed simply by adding the reflexive clitic to the verb. Observe the examples in *Table 3*:

Table 3

⁸ However, not all ergative verbs can be passivized.

⁹ Anticausatives is a synonym for ergative verbs.

¹⁰ The reflexive passive is also very common in other Slavic languages and Romance languages.

2-participant	1-participant
The kiss changed the prince into a frog. <i>Poljubac je promijenio princa u žabu.</i>	The prince changed into a frog. <i>Princ se promijenio u žabu.</i> ¹¹
The owner is closing the shop. <i>Vlasnik zatvara trgovinu.</i>	The shop is closing. <i>Trgovina se zatvara.</i>
She continued the race. <i>Nastavila je utrku.</i>	The race continued. <i>Utrka se nastavila.</i>
They intensified the negotiations. <i>Intenzivirali su pregovore.</i>	The negotiations intensified. <i>Pregovori su se intenzivirali.</i>
Mom is cooking soup. <i>Mama kuha juhu.</i>	Soup is cooking. <i>Juha se kuha.</i>

More could be said about the reflexive passive and its relation to other forms of passivization and impersonalization. However, this topic is not crucial for our work, especially since color verbs **do not** conform to the previously presented pattern. Color verbs demonstrate a high degree of complexity in their organization, which is in large part a reflection of the Croatian verbal system as a whole. Consider the following example:

The storm blackened the sky. *Oluja je zacrnila nebo.*

The sky blackened. *Nebo je pocrnjelo.*

Whereas English distinguishes between the sentences only syntactically, keeping the verb form intact, Croatian uses two verbs that have both a different derivational prefix and a different derivational suffix. In order to explain the reasons behind this state of affairs, in the subsequent sections we will analyze all the word formation types used in production of color verbs. These are suffixation, reflexivization and prefixation.

2.3 FORMATION OF COLOR VERBS IN CROATIAN

¹¹ The perfect tense in Croatian, which is the general past tense, consists of an adjectival participle with the formant *-l-*, inflected in gender and number, and the auxiliary verb *biti* ‘to be’. For instance, the verb *čuti* ‘to hear’ generates the forms *čuo sam* ‘I heard (m.)’, *čula sam* ‘I heard (f.)’, *čuo je* ‘he heard (m.)’, *čulo je* ‘it heard (n.)’, *čule su* ‘they heard (f.)’, *čula su* ‘they heard (n.)’. However, in the 3rd person singular the auxiliary verb is omitted if a pronominal clitic or a reflexive clitic is used in the sentence. Hence, while in the sentence *Čuo sam te* ‘I heard you’ the clitic object pronoun is present, it is dropped in the 3rd person singular: *Čuo me je* > *Čuo me* ‘He heard me’. The same happens with the reflexive clitic: *Pogledao se je u ogledalu* > *Pogledao se u ogledalu* ‘He watched himself in the mirror’, *Vaza se je razbila* > *Vaza se razbila* ‘The vase broke’, etc.

Prefixation and suffixation are an especially important part of the Croatian, and Slavic in general, verbal system. In my opinion, Croatian verb derivation can be regarded as situated at the boundary between grammar and lexicon. From a grammatical point of view, verbal derivation forms the basis of the system of aspectual oppositions.¹² From a lexical point of view, it enables the creation and introduction of new verbs with new meanings into the lexicon. As we shall see, especially in the case of prefixation, these two aspects are intertwined and that is the main reason of the great complexity of the Croatian verbal system.

With regard to color verbs, the type of suffixation determines their transitivity, while the prefixation (or lack thereof) determines their verbal aspect and nuances of meaning. Suffixation behaves as a symmetrical process, producing binary pairs of transitive and intransitive verbs, while, on the other hand, prefixation is more complex and arbitrary. All color verbs show similarities in the choice of prefixes, but their quantity and quality is verb-specific.

Finally, reflexivization is especially important for color verbs as it modifies their meaning in a unique, yet consistent way.

2.3.1 SUFFIXATION

¹² Here we cannot give a detailed account of the category of aspect in Croatian, but we will make a few general remarks. In Croatian most verbs come in aspectual pairs where one verb is perfective (denoting an action that ended) and the other one is imperfective (denoting an ongoing action), e.g. *čitati* ‘to read (impf.)’ – *pročitati* ‘to read (pf.)’, *kupiti* ‘to buy (pf.)’ – *kupovati* ‘to buy (impf.)’ This allows Croatian to have a more simple system of tenses when compared to the English language. Because the aspectual distinctions are already lexicalized, contained in the verbs themselves, there is no need to apply different tense markers to denote aspect. As a result, whereas in English it is required to use two different tenses to express the perfective and the imperfective action, in Croatian only one tense is used but with different verbs. The English sentences *She was reading a book (when Fred came in)* and *She read a book (during class)* correspond to Croatian *Čitala je knjigu* and *Pročitala je knjigu*. This does not go to say that the Simple and Continuous tenses in English entirely overlap with the use of perfective and imperfective verbs, but the comparison is good enough to serve as a general guideline.

In the prescriptive Croatian grammar (Babić, 2002) the transitivity of color verbs is said to be dependent on the derivational suffixes used in their formation. Generally, color verbs come in binary pairs that are distinguished by the suffixes *-i-* and *-je-*, e.g. the adjective *žut* ‘yellow’ gives the verbs *žutjeti* ‘to make yellow’ and *žutiti* ‘to become yellow’, *crven* ‘red’ gives *crveniti* ‘to make red’ and *crvenjeti* ‘to become red’, etc.¹³ In each pair the verb formed with the suffix *-je-* denotes an intransitive process, while the verb formed with the suffix *-i-* denotes a transitive process. In other words, the meaning of the *-je-* variety is „to become of a certain color“ (inchoative), while the meaning of the *-i-* variety is „to make to become of a certain color“ (causative).

Table 4

Transitive - Causative	Intransitive - Inchoative
<i>crven-i-ti</i>	<i>crven-je-ti</i>
<u><i>Crvenila je haljinu.</i></u> ‘She was dying the dress red (*reddening).’	<i>Sa svakim komplimentom, sve je više <u>crvenjela.</u></i> ‘With every compliment, she blushed more and more (*reddened).’

The *-i-/je-* opposition is characteristic of a wider range of adjectival verbs and not only color verbs, with examples such as *hladniti/hladnjeti* ‘to make/become cold’, *slijepiti/slijepjeti* ‘to make/become blind’, *slabiti/slabjeti* ‘to make/become weak’, etc. Nevertheless, the opposition between the causative and inchoative paradigm is not consistent throughout the verbal system. The two paradigms merge in the present tense (Table 5, Example 1) and, additionally, in the masculine singular forms of the perfect tense (Table 5, Example 2).¹⁴

Table 5

¹³ The suffixes are attached to the basic form of the adjective, i.e. the masculine singular form, and followed by verbal endings. The ending *-ti* is the infinitival ending.

¹⁴ The merger also takes place in all the forms of the obsolete imperfect tense.

	Transitive -i- paradigm	Intransitive -je- paradigm
1	<i>Sunce tamni̇ kožu.</i> ‘The sun darkens the skin.’	<i>Koža tamni̇.</i> ‘The skin darkens.’
	<i>Sunce (n.) je tamni̇lo kožu.</i> ‘The sun was darkening the skin.’	<i>Koža (f.) je tamni̇ela.</i> ‘The skin was darkening.’
2	<i>Strah slaḃi vojnika.</i> ‘The fear is weakening the soldier.’	<i>Vojnik slaḃi.</i> ‘The soldier is weakening.’
	<i>Strah (m.) je slaḃio vojnika.</i> ‘The fear was weakening the soldier.’	<i>Vojnik (m.) je slaḃio.</i> ‘The soldier was weakening.’

In the left side of the table we see that *-i-* forms appear where we would expect *-je-* forms. The collision of *-je-* to *-i-* in these cases is due to historical phonological reasons that we are not going to elaborate here. The presented ambiguities, combined with other factors, make this system an unstable one and prone to changes, which have already taken place in the everyday language. We will return to this issue after analyzing the language data from the corpus.

2.3.2 REFLEXIVIZATION

Color verbs, as we have explained, distinguish between transitive and intransitive forms. However, intransitive forms can be further modified by the addition of the reflexive pronoun *se*.¹⁵ As a result, one color verb potentially has three different variants: transitive, intransitive and reflexive, as in *žititi – žutjeti – žutjeti se* from *žit* ‘yellow’.¹⁶ The fact that the reflexive variant is derived from the intransitive verb form is peculiar, considering that reflexivization most commonly applies to transitive verbs (Barić et al., 2005).

It is important to note that we are approaching reflexivization as a word formation tool, a method for creating new verbal meanings. This is different from the reflexive passive construction mentioned earlier, where the reflexive is used syntactically to change the

¹⁵ *Se* is the accusative clitic form and it is the same for all persons in singular and plural.

¹⁶ At this moment we do not take into account the additional complexities brought about by prefixation, which is covered in the next section.

argument structure of the sentence.¹⁷ Croatian, similarly to other Slavic languages and Romance languages, uses the reflexive pronoun to modify the meaning of the verb in different ways, some of which are systematic and some of which are idiosyncratic, specific to certain verbs. Traditional Croatian grammar distinguishes between three types of reflexive verbs. Two types that are consistent in their meaning are the **true reflexive verbs** and **reciprocal verbs**. In the first group the agent of the action is also the patient of the action and it is, therefore, possible to use the full, non-clitic form of the reflexive pronoun: *Ivan se gleda* is equal to *Ivan gleda sebe* ‘Ivan looks at himself’. The reciprocal meaning refers to two or more agents mutually affecting each other: *Ivan i Ana se gledaju* ‘Ivan and Ana are looking at each other’. The third group encompasses all the remaining verbs which are named as **untrue reflexive** verbs. This is where color verbs belong. For reasons of practicality, we are going to call them **pseudoreflexives**.¹⁸

Intransitive and pseudoreflexive color verbs, naturally, show a difference in meaning. This is also reflected in the fact that they have separate dictionary entries. Intransitives denote a process of becoming of a certain color, a change of state, as in *Nebo je sivjelo* ‘The sky was graying’. They encode an **inchoative meaning**. Pseudoreflexives indicate that an entity stands out in color and encode what we shall call the **intensive meaning**. They are more difficult to describe as we do not find a direct equivalent in the English language. A comparison can be made between pseudoreflexives and adjective predicates, so that a sentence such as *More se plavjelo* can be paraphrased as *More je bilo plavo* ‘The sea was blue’. However, while the copular sentence only attributes a property to an entity and there is no action involved, the use of a pseudoreflexive makes the entity a true participant of the action. In the two sentences there is an important difference in the perceived agency of the subject. In order to approximate the intensive meaning of color verbs and highlight its dynamicity, I find it useful

¹⁷ While it is theoretically possible to use **transitive** color verbs in this construction, it is very unlikely. A sentence such as *Ograda se plavi* would not be interpreted as ‘The fence is being painted blue’, but would be attributed an **intensive meaning** (see next paragraph).

¹⁸ The term typically used in the Romance linguistic tradition is **pronominal verbs**. However, it frequently refers only to those verbs that do not have a non-reflexive counterpart, e.g. Spanish *arrepentirse* ‘to repent’, *atreverse* ‘to dare’, *quejarse* ‘to complain’. Pseudoreflexives, on the other hand, include both the verbs that are inherently pronominal and those that are not: *kajati se* ‘to repent’, *usuditi se* ‘to dare’, but also *micati* – *micati se* ‘to move (something) – to move (oneself)’, *razljutiti* – *razljutiti se* ‘to make angry – to become angry’, etc.

to relate it to the concept of „emission“. At an abstract level, the entity used with a pseudoreflexive could be described as „emanating a certain color“. ¹⁹

Looking at the dictionary definitions, the inchoative – intensive system does not seem to be perfectly neat. Some color verbs are listed only in their reflexive form, e.g. *zelenjeti se* ‘to green’, *bijeljeti se* ‘to whiten’. There is no apparent reason why this would be so. An entity can become green as much as it can become blue or yellow and, vice versa, an entity can stand out in green as much as it can stand out in blue or yellow. We assume that the differences between some of the lexical entries are due to the fact that color verbs are marginal in language use and it is, therefore, easy to overlook such inconsistencies.

Before we continue to the discussion of prefixation, we will briefly consider the Russian color verb system. In the Russian language the intensive meaning can be expressed both by intransitive and reflexive verb forms. While in Croatian ‘to stand out in black’ is expressed only by *crnjeti se* and never by *crnjeti*, in Russian both *чернеть* and *чернеться* demonstrate this meaning. ²⁰ However, Israeli (1998), following other Russian linguists, notes that there is a difference between the two variants. Namely, „color verbs in *-sja* represent a deictic feature of „distance“ between the speaker/narrator (P^S) and the described object (Pⁿ).“ Observe the following examples:

Vokrug vysokogo čela, Kak tuči, lokony **černejut**. (Puškin: Poltava)
‘Around his high forehead, his curls are black, like storm clouds.’

Xolm, pokrytyj pelenuju snega; na ego veršine **černelsja** kamennyj krest. (Lermontov: Geroj našego vremeni)
‘A hill covered by a blanket of snow; on its top there is a black stone cross.’ (Israeli, 1998)

In the first example the speaker is, presumably, in the vicinity of the described object, while in the second example the object is in the distance, „on top of a hill“. This deictic opposition between the forms has, nevertheless, weakened in time and is now „the state of the past“

¹⁹ A parallel can be drawn between this interpretation and verbs denoting the emission of light – glowing and shining. Interestingly, all such verbs in Croatian can be used as pseudoreflexives while keeping the same basic meaning, e.g. *sjajiti – sjajiti se* ‘shine’, *svjetlucati – svjetlucati se* ‘glitter’, *blistati – blistati se* ‘blaze’, *bljeskati – bljeskati se* ‘flash’, etc.

²⁰ In Russian the reflexive clitic is amalgamated to the verb.

(Israeli, 1998). In contemporary Russian language reflexive color verbs are disappearing in favor of their non-reflexive counterparts. This is in complete contrast to Croatian where reflexivity is the crucial ingredient for expressing the intensive meaning.

2.3.3 PREFIXATION

Prefixation is a means of producing aspectual verb pairs, i.e. pairs of imperfective and perfective verbs. Consider the verbs *crveniti* and *zacrveniti* in the following sentences: *Crvenila je usne ružem* ‘She was reddening the lips with a lipstick’ and *Zacrvenila je usne ružem* ‘She reddened the lips with a lipstick’. Prefixation always involves perfectivization: a prefixed verb is always perfective in relation to the main verb. For instance, the verbs *pocrniti*, *zacrniti* and *ocrniti* are all perfective derivatives of the imperfective verb *crniti* ‘to blacken’. At a higher level of derivation, a prefixed verb can again be made imperfective by suffixation, as in *zacrniti* (pf.) – *zacrnjivati* (impf.). The fact that prefixed verbs can themselves be perfective and imperfective leads to the conclusion that prefixation does not entail a mere aspectual change, but a wider semantic modification. This is also apparent from the number of prefixes available for the derivation of color verbs and verbs in general. *Hrvatska gramatika (Croatian Grammar)* by Barić et al. (2005) identifies 19 different prefixes in Croatian, while *Tvorba riječi u hrvatskome književnome jeziku (Word formation in Standard Croatian language)* by Babić (2002) provides a list of 28 prefixes.²¹ Color verbs, of course, are not found with the whole repertoire of prefixes. Data from the Croatian National Corpus (HNK) shows that, by far, the most frequent prefix is *po-*. The forms made with this prefix generally outnumber the non-prefixed forms. *Po-* is then followed by *za-* and *o-*. Other prefixes are sporadic and limited to certain verbs.

It is generally difficult to specify the exact meaning of prefixes, due to their abstract and polysemous nature.²² The same is true for color verbs. For instance, even though the verbs

²¹ Including prefixes of foreign origin.

²² In some cases a common meaning can be identified across a whole group of verbs, as in *pjevati* – *zapjevati* ‘to sing – to begin to sing’, *plivati* – *zaplivati* ‘to swim – to begin to swim’, *plakati* – *zaplakati* ‘to cry – to begin to cry’, while in some cases the meaning seems to be completely idiosyncratic, as in *baviti se* – *zabaviti se* ‘to dedicate oneself to – to have fun’, *moći* – *pomoći* ‘to be able to – to help’. In the latter cases the link between the main verb and its derivative is no longer perceived by the speakers and, in consequence, these verbs do not form lexical pairs. Instead, a prefixed verb obtains a new aspectual equivalent by means of suffixation: *zabaviti se* (pf.) – *zabavljati se* (impf.), *pomoći* (pf.) – *pomagati* (impf.). In conclusion, it is necessary to look at individual verb pairs in order to specify the semantic contribution of the prefix.

pocrniti, *zacrniti* and *ocrniti* can all be defined as ‘to make something black’, a native speaker would probably use *pocrniti* with hair, *zacrniti* with squares in a questionnaire and *ocrniti* would be used in its more dominant, metaphorical meaning of ‘to slander, to defame’, as in *Ocrnila ga je na sudu* ‘She slandered him in court’. This indicates there are semantic nuances, or differences, between the prefixes. Moreover, prefixation is not independent from other derivational processes, namely suffixation and reflexivization, which have been covered previously. These processes do not act separately in word formation: they are both interrelated and mutually conditioned. For example, while we can use both *pocrvenjeti* and *zacrvenjeti* as equivalents of ‘to blush’, the latter is always used reflexively and the former non-reflexively: *Pocrvenio sam* ‘I blushed’ in contrast with *Zacrvenio sam se*.

In order to analyze how prefixation, suffixation and reflexivization function in the system of color verbs and to identify the regularities and irregularities within the system, we have to take a look at actual language use. In the second part of the thesis we will conduct an analysis of color verbs on the basis of their occurrences in the HNK.

3. PART TWO

Corpus analysis

3.1 METHODOLOGY

The analysis is based on texts from the Croatian National Corpus (HNK), version 2.5, which is morphosyntactically annotated and currently contains 1 303 112 tokens. HNK is largely composed of informative texts (74%), such as newspapers and magazines, while the rest is accounted for by different works of fiction (23%). It is the largest and most important Croatian corpus and it aims to reflect as best as possible the contemporary use of the standard Croatian language.

I chose to analyze color verbs derived from six color adjectives: *zelen* ‘green’, *žut* ‘yellow’, *crven* ‘red’, *plav* ‘blue’, *bijel* ‘white’ and *crn* ‘black’. For each selected adjective I had to retrieve all the derived color verbs that appear in the corpus. I did this by using regular expressions such as `[.*zelen.+]` and `[.*žut.+]`. The form of the expression was chosen with the aim of retrieving all color verb forms generated by a given adjective while minimizing the retrieval of other word types. For example, the expression `[.*zelen.+]` retrieves the verb forms *ozelenio je*, *pozelenio je*, *zelenjela je*, *zeleni*, *zazelenjeti*, etc., but also some other words like *zelenkast* ‘greenish’, *zeleno-bijeli* ‘green-white’, *zimzelen* ‘evergreen’. The obtained concordances were filtered in two steps. First, all concordances with non-verbal morphosyntactic labels were deleted and then the remaining results were once again checked for incorrect annotations. Finally, the concordance lists for each of the color verb groups were numbered, alphabetically sorted (grouped by prefix) and exported as a Notepad readable file.

In the following phase I extracted the quantitative and qualitative information I deemed important for interpretation from each concordance list. This information includes:

- Total number of occurrences of color verbs derived from the same adjective
- Number and ratio of different prefixed and non-prefixed color verb variants derived from the same adjective ²³

²³ Here it is necessary to make a few terminological clarifications. Some terms which I have used previously in a more or less interchangeable manner now need to be clearly delineated in order to account for all the different aspects and manifestations of color verbs. These terms are **variant**, **use** and **form**. **Variant** refers to verbs in

- Number and ratio of transitive, intransitive and reflexive uses for each prefixed or non-prefixed variant
- Prominent verb arguments in each transitivity pattern
- Number of irregularities for each variant, i.e. cases where the transitivity of the verb does not correspond to the suffix used ²⁴

In the first part of the analysis each color verb group, defined by a single color, is analyzed in a separate section. At the beginning of each section there is a table that presents the retrieved information for a given group. The highest values (most prevalent prefix and most prevalent transitivity pattern for each variant) are highlighted with thicker borders. Percentages are rounded to the nearest whole percent. The number of irregularities is noted down but their interpretation is reserved for later (see **2.2.3 Irregularities**).

Arguments require a more extensive explanation. In the analysis I define verb arguments with regard to their grammatical function (subject or object) and semantic category (human, plant, surface, etc.). I have put the focus on the semantic properties of arguments and not the semantic relationship between the verb and its arguments. In other words, I have not defined arguments on the basis of their semantic roles, such as agent, patient, experiencer, etc. I believe this is the best approach for this research as the semantic properties of arguments point to contextual limitations of each color verb variant and enable their differentiation. Semantic categories were not determined in advance, but have been established during the data retrieval process on the basis of frequency and relevancy of perceived semantic properties of verb arguments. Only the entities that appear with sufficient frequency to be considered prominent in a certain transitivity pattern have been grouped into categories.²⁵ The table below enlists all the grammatical functions and semantic categories along with their corresponding labels. The functional label and the semantic label are combined to define each typical argument, e.g. S.HUM, O.HUM, S.SFR, etc. In cases when various entities appear as

relation to their prefix. There is always one non-prefixed, simple variant and a number of prefixed variants (*po-*, *za-*, *o-*, etc.). On the other hand, **use** refers to the transitivity pattern a verb establishes in a sentence, which can be transitive, intransitive or reflexive. Finally, **form** is related to the suffix of the verb. Hence, we differentiate between *-i-* and *-je-* forms. Forms will be discussed later in the *Comprehensive analysis* part.

²⁴ As I have noted, the standard Croatian norm prescribes that color verbs with the suffix *-i-* should be used only transitively, while those with the suffix *-je-* should be used intransitively or reflexively.

²⁵ The sufficient level of frequency is, however, based on subjective observations.

arguments in a certain transitivity pattern or when there are too few examples to determine which are the prominent arguments the category is left unspecified (S.X or O.X). In cases when there is a single noun that typically acts as the argument of the verb, this noun is indicated instead. Of course, a transitivity pattern can have more than one typical argument, each one usually related to a different meaning.

Table 6: Argument labels

Grammatical function		Semantic category	
S	subject	X	unspecified
O	object	HUM ²⁶	human
		BPT	body part
		PLT	plant
		SRF	surface
		BLD	building

Further on, the data analysis includes many examples of the uses of color verbs in the corpus. In each example the inflected form of the color verb is underlined and the arguments are labeled according to their grammatical function and semantic category. The label is located on the head of the subject or object noun phrase. Pronouns are labeled according to the category their referent belongs to. Additionally, adjuncts of cause that are associated with color verbs are marked in dotted brackets as they will be important for discussion. I decided to annotate examples in this way in order to exclude unnecessary information and keep the text clean, while, at the same time, making sure that the observed phenomena are grammatically comprehensive to non-native readers.

Finally, it may come to your attention that some phenomena have not been explained or fully explained in the analysis of color verb groups. These are the phenomena that should be observed from the perspective of the system as a whole. While each color verb group has its own peculiarities, the relations between the variants within each group and some of their

²⁶ Includes organizations, associations, settlements, etc., when they are used metonymically to refer to a group of people.

features are the same across the system. These issues will be explored in the second part of the analysis, titled *Comprehensive analysis*.

3.2 ANALYSIS OF INDIVIDUAL COLOR VERB GROUPS

3.2.1 Zelen

ZELEN 'green'								
N° of verbs	Prefixes			Transitivity		Prominent arguments	Irregularities	
65	∅	14	22%	<i>tr.</i>	0	0%		1
				<i>intr.</i>	0	0%		
				<i>refl.</i>	14	100%	S.PLT, S.SFR	
	po-	16	25%	<i>tr.</i>	1	6%	S.X - O.X	0
				<i>intr.</i>	15	94%	S.HUM	
				<i>refl.</i>	0	0%		
	za-	15	23%	<i>tr.</i>	0	0%		2
				<i>intr.</i>	3	20%	S.X	
				<i>refl.</i>	12	80%	S.SFR, S.PLT	
	o-	20	31%	<i>tr.</i>	18	90%	S.HUM - O.SFR	0
				<i>intr.</i>	2	10%	S.X	
				<i>refl.</i>	0	0%		

In the corpus the non-prefixed, or **simple** variant, which is by nature imperfective, is always used reflexively. The reflexive use is related to the intensive meaning which highlights the

saliency of the color assigned to a certain entity. As the green color is most firmly associated with plants, the involved entities tend to be plants or plant-covered surfaces.

E.1 voće je svuda cvalo, bregovi^{S.SFR} se zelenjeli, a iz šumice navalio miomiris.

‘fruits blooming everywhere, the hills were green, and from a small forest a fragrance rushed.’

E.2 Po zidovima zgrade zelenjele su se puzavice^{S.PLT}

‘There were green creepers along the walls of the building’

The *po-* variant is almost exclusively used intransitively in the inchoative meaning. It can be used with any type of entity but is most frequently found with a human subject. The person in question, or a specific body part, becomes green or is regarded as such. The cause of the change is usually a negative feeling of some kind, whether psychological (anger, misery) or physical (nausea). The cause can be explicitly expressed by a prepositional *od* phrase.

E.3 uskoro je i Janković^{S.HUM} "pozelenio" od mučnine.

‘soon Janković too “turned green” from nausea.’

E.4 te bi [Marijan^{S.HUM}] od bijesa i srdžbe pozelenio kao trava i u času takove besvjestice mogao počiniti najveći zločin.

‘and Marijan would turn green like grass of rage and anger, and in the moment of such loss of control he could commit the greatest crime.’

The *za-* variant is mostly used reflexively and has plants or plant-covered surfaces as its subjects. However, its meaning differs from the previous variant. It denotes that an entity becomes green, usually by plant growth. For example, in the sentence *Polje se zazelenjelo* ‘The field greened’ the field has become green as a result of plants growing and covering its surface.

E.5 Isušena trava^{S.PLT} na Podiću opet se zazelenjela od kiše i trakova sunčanih

‘Dried grass at Podić became green again due to rain and rays of sunlight’

E.6 s prvom kišom sve^{S.SRF} će se zazelenjeti.

‘with first rain everything will turn green’

In contrast to the previous variants the *o-* variant is primarily used transitively. The examples involve a person or a company dedicated to the maintenance of green surfaces as the subject and a surface to be covered with vegetation as the object of the verb. The type of vegetation being introduced can be specified by adding a noun phrase in the instrumental case, which in English corresponds to a prepositional phrase introduced with *by* or *with*.

E.7 Grad^{S.HUM} je lani ozelenio travnjake^{S.SFR} uz ceste , ali godinu dana kasnije imamo blato i posvuda kaljuže.

‘Last year the city greened the lawns by the roads, but a year later we have mud and puddles everywhere.’

E.8 ovog će se²⁷ proljeća, ukrasnim, vodenim biljem ozeleniti obale^{O.SFR} drugog jezera.

‘this spring the shores of the other lake will be planted with decorative, aquatic plants.’

3.2.2 Žut

ŽUT 'yellow'									
N° of verbs	Prefixes			Transitivity			Prominent arguments		Irregularities
89	∅	16	18%	<i>tr.</i>	0	0%			4
				<i>intr.</i>	6	38%	S.X		
				<i>refl.</i>	10	63%	S.X		
	po-	72	81%	<i>tr.</i>	3	4%	S.X - O.X		2
				<i>intr.</i>	69	96%	S.HUM		
				<i>refl.</i>	0	0%			
<i>others</i>	1	1%						1	

The non-prefixed variant, used reflexively or intransitively, can assume any type of argument that is perceived as being or becoming yellow, such as leaves and papers.

²⁷ Here the reflexive pronoun is not a part of the verb but a syntactic marker of impersonalization.

E.9 Lišće^{S.X} vinjage, što se penje od mojih prozora, stalo je žutjeti i crvenjeti .

‘Vine leaves, which climb up from my window, started to yellow and redden.’

The *po-* variant assumes similar types of arguments but there are some differences between the two variants in the corpus. In relation to newspapers *požutjeti* can refer to the “yellow press”, the kind of press that resorts to sensationalism to attract readers. Observe the following example:

E.10 Onda je *Večernji list*^{S.X} morao malo požutjeti i biti malo kritičniji prema vlasti kako bi se održao u toj borbi s *Jutarnjim listom*.

‘Then the *Večernji list* had to turn yellow a bit and be more critical towards the government in order to maintain itself in that struggle with the *Jutarnji list*.’²⁸

Moreover, the *po-* variant often has a person or a body part (*face*) as its argument. This has also been true for the *green-*derived *po-* variant. The cause of becoming yellow is again psychological, induced by fear, malice, rage, etc., or physical, in which case it is associated with fatigue or a bad state of well-being.

E.11 Ljudi^{S.HUM} što su stanovali u ulici, gdje je bio Žleb, zinuli od čuda i požutili od zlobe, kad su vidjeli Žleba kako se seli.

‘The people who were living in the street, where Žleb was, were agape of surprise and yellow with malice when they saw Žleb moving out.’

E.12 Kosa mu visijaše niz čelo, lice^{S.BPT} požutjelo, usne blijede, a velike bijele oči da će mu skočiti iz glave.

‘The hair was falling across his forehead, his face had turned yellow, lips pale, and big white eyes were about to spring from his head.’

Interestingly, the largest number of occurrences of this verb comes from sports journalism jargon. This is due to the corpus being largely made up of newspapers that, in turn, have

²⁸ The *Večernji list* (‘Evening newspaper’) and the *Jutarnji list* (‘Morning newspaper’) are the two main daily newspapers in Croatia.

sports sections in them. In the context of sports *to become yellow* has the metonymical meaning *to be given a yellow card*.²⁹

E.13 Problemi su sljedeći: Gusić^{S.HUM} “požutio”, Ostopanj ozlijeđen, Babić neoporavljen.

‘The problems are following: Gusić has been given a yellow card, Ostopanj has been injured, Babić has not recovered.’

E.14 Nakon sučevog oglašavanja prekida igre [Zoran^{S.HUM}] gurnuo je loptu i sasvim zaslužen požutio.

‘After the judge’s signal to end the game Zoran pushed the ball and was rightfully given a yellow card.’

3.2.3 *Plav*

PLAV 'blue'								
N° of verbs	Prefixes			Transitivity			Prominent arguments	Irregularities
17	∅	6	35%	<i>tr.</i>	0	0%		4
				<i>intr.</i>	1	17%	S.X	
				<i>refl.</i>	5	83%	S.X	
	po-	11	65%	<i>tr.</i>	0	0%		6
				<i>intr.</i>	11	100%	S.BPT	
				<i>refl.</i>	0	0%		

The vast majority of the retrieved concordances for the verbs derived from *plav* ‘blue’ were false retrievals. This is due to the fact that there are two homographic verbs *plaviti*: there is *plaviti* that means ‘to flood’, and is etymologically related to *plivati* ‘swim’, and *plaviti* that is derived from the adjective *plav* ‘blue’. The prefixed variants of these verbs also share the

²⁹ Yellow card is a type of cautionable offence in football.

same forms. As newspapers report occurrences of floods, there is a vast number of such examples in the corpus.

True occurrences of *blue*-derived color verbs are not many. There are a few instances of the non-prefixed variant, such as the following:

E.15 Iznad kamenita, bijela Velebita, od istoka izlazi crveno sunce, pod Velebitom se more^{S.X} plavi.

‘Above the rocky, white Velebit, red sun rises from the east, under the Velebit there is the blue sea.’³⁰

All the *po*- variants have humans or body parts as subjects. The subject’s change of color may be attributed to psychological reasons (*fear*), but is more often attributed to physical reasons: the withdrawal of blood due to cold, sickness or death, or a swelling caused by a hit.

E.16 Od straha su mi poplavile ruke^{S.BPT} i počela sam se tresti

‘My hands turned blue with fear and I began to shake’

E.17 zbog udaraca u glavu uši^{S.BPT} su mu poplavile s unutarne strane.

‘due to the hit in the head his ears had turned blue on the inner side.’

E.18 U jednom trenutku Milka^{S.HUM} je samo poplavjela u licu, pokušala sam joj pomoći, masirati srce, ali za minutu-dvije sve je bilo gotovo.

‘At one moment Milka just turned blue [in her face], I tried to help her, to massage her heart, but in a minute or two it was all over.’

³⁰ Velebit is the largest mountain chain in Croatia, located near the Adriatic sea.

3.2.4 Crven

CRVEN 'red'										
N° of verbs	Prefixes			Transitivity			Prominent arguments			Irregularities
190	∅	67	35%	tr.	0	0%				10
				intr.	7	10%	S.X			
				refl.	60	90%	S.HUM, S.BPT			
	po-	91	48%	tr.	3	3%	S.X - O.X			36
				intr.	87	96%	S.HUM, S.BPT			
				refl.	1	1%	S.X			
	za-	31	16%	tr.	2	6%	S.X - O.X			6
				intr.	0	0%				
				refl.	29	94%	S.HUM, S.BPT			
	others	1	1%							0

Red-derived color verbs can refer to anything red or that which is becoming red. However, in the vast majority of cases they refer to humans and body parts. In the cases where the subject is a person that subject only acts as a holonymic (the whole for a part) substitute for the face. When someone is described as being or becoming red he does not become so all over his body but in his face. If the redness does occur all over the body this is overtly stated, as for instance in *sav je pocrvenio* ‘he reddened all over’. This explanation applies to other color verbs as well. Of the two prefixed variants the *za-* variant is primarily associated with the face, similarly to the English *blush*, while the *po-* variant is also used with other body parts and non-human subjects, similarly to the English *reddden*.³¹ The causes of facial redness are often embarrassment or anger.

E.19 nije mi bilo najugodnije ni kad sam medicinskoj sestri predavao čašicu sa spermom.
[ja^{S.HUM}] Malo sam se zacrvenio.

³¹ In Croatian there is also a near-synonym of *crven* mostly used in relation to the face, namely *rumen* ‘rosy’, but it can generally be substituted with *crven* and to me it seems it is more often used in literary language.

‘I was not feeling very comfortable either when I was handing the cup with the sperm to the nurse. I blushed a little.’

E.20 Zlatko Šešelj^{S.HUM} se [*sic*] zacrvenio se od ljutnje

‘Zlatko Šešelj reddened with anger’³²

The physical aspect of the verb’s meaning does not have to be present. In that case the consequence (blushing) metonymically stands for the cause (embarrassment) and the verb attains the meaning of *to be embarrassed or ashamed*.

E.21 Ova Vlada^{S.HUM} nema razloga crveniti se

‘This government has no reason to blush’

E.22 Oni^{S.HUM} se ne trebaju zbog drugih ni pred kim crvenjeti, jer su u Domovinskom ratu dali maksimalno

‘they do not have to be ashamed in front of anyone because of others, because they gave their maximum in the War of Independence’

Various examples refer to other body parts.

E.23 rukavi im bijahu zasukani preko lakata pa im se snažne mišice^{S.BPT} sve crvenjele na hladnome zraku

‘their sleeves were rolled up over their elbows so their strong upper arms were all red from the cold air’

E.24 Oči^{S.BPT} su mu pocrvenjele [od bdjenja].

‘His eyes reddened from staying awake.’

The *po*-variant of *red*-derived verbs, as the one derived from *yellow*, is often used in sports discourse metonymically to indicate that a certain player has been given a red card, a which is a sign of serious misconduct during play.

E.25 Na utakmici s Cibalijom na sreću nitko^{S.HUM} nije "pocrvenio"

³² This example shows that *red* is also used in relation to the face but in different contexts. While *blush* is the appropriate choice for the first sentence, in the second sentence it would be odd to say *blushed with anger*.

‘At the match against Cibaliija luckily no one got a red card’

3.2.5 Bijel

BIJEL 'white'								
N° of verbs	Prefixes			Transitivity			Prominent arguments	Irregularities
158	∅-	69	44%	<i>tr.</i>	3	4%	S.X - O.X	27
				<i>intr.</i>	1	1%	S.X	
				<i>refl.</i>	65	94%	S.BLD	
	<i>po-</i>	16	10%	<i>tr.</i>	2	13%	S.X - O.X	4
				<i>intr.</i>	14	88%	S.X	
				<i>refl.</i>	0	0%		
	<i>za-</i>	59	37%	<i>tr.</i>	20	34%	S. <i>snijeg</i> ('snow') - O.SRF	23
				<i>intr.</i>	14	24%	S. <i>dan</i> ('day')	
				<i>refl.</i>	25	42%	S.X	
	<i>iz-</i>	11	7%	<i>tr.</i>	11	100%	S.HUM - O. <i>zubi</i> ('teeth')	0
				<i>intr.</i>	0	0%		
				<i>refl.</i>	0%	0%		
<i>others</i>	3	2%						

Among the entities that serve as subjects of the non-prefixed, reflexive, variant especially numerous are buildings: houses, churches, towns (as collections of buildings). This bit of information is culturally revealing as it points to the fact that buildings tend to be white in the region to which Croatia belongs. Other entities include different types of garment and cloth, snow, etc.

E.26 nedaleko od Alfredova stana, bijeljela se malena crkvice^{S.BLD}

‘not far away from Alfred’s apartment, there was a white little church’

E.27 Gore na brijegu bijelio se grad^{S.BLD}, opasan zidinom i zaštićen kulom.

‘Up on the hill there was the white town, fortified and protected by a tower.’

E.28 Osvanuo je sav u crnom, samo mu se bijelila košulja^{S.X}

‘He appeared all in black, with only his shirt in white’

The *po-* variant refers to changes of color of a more permanent nature or, with human subjects, changes in the face caused by emotions such as fear or surprise.

E.29 U jednom uglu [bila je] klupska garnitura od zelene kože^{S.X}, koja je već pobijelila od duge upotrebe.

‘In one corner there was a set of padded furniture made of green leather that had already whitened from years of use.’

E.30 Apsint^{S.X} pobijeli i postane neproziran kada voda poremeti omjer alkohola i biljnog ekstrakta

‘Absinthe whitens and becomes transparent when water disrupts the ratio of alcohol and the herbal extract.’

E.31 Marica se snebivala, blijedo lice^{S.BPT} još jače pobijelilo, do prozirnosti.

‘Marica was shocked, her face whitened even more, until it became transparent.’

The *za-* variant is the most diverse variant with regard to transitivity patterns it can adopt. As with *za-* variants of other color verbs it is most frequently used reflexively, but it also has a considerable number of transitive and intransitive uses. The transitive use usually entails *snijeg* ‘snow’ as the subject and the surface it covers as the object of the verb. In comparison to the neutral use of *cover* in English, the use of the color verb in Croatian highlights the changes in scenery that are brought about by snowing, namely, the change to a snowy, **white** environment.

E.32 U slučaju da snijeg^{S.snijeg} ozbiljno zabijeli prometnice^{S.SRF}, u "Unikomu" doznajemo da za sat vremena jednim vozilom mogu očistiti 25 kilometara

‘In case the snow heavily covers the roads, they inform us in “Unikom” that with one vehicle they can clean 25 kilometers in an hour’

E.33 Uklanjanje snijega s kolnika počelo je čim je snijeg^S zabijelio gradske površine.

‘The removal of snow off the roadway has begun as soon as it covered the city’s surfaces.’

Its intransitive use is contextually restricted and associated with *dan* ‘day’, or *zora* ‘dawn’. The day is said to “whiten” when it begins, pointing to the increase in lightness.

E.34 Kad je došao među gradske ulice, već je dan^{S.dan} zabijelio.

‘When he entered the city streets, the day had already begun.’

Examples of the *za-* variant used reflexively include:

E.35 Već snijeg pada u gustim pahuljama. No na ulicama je još uvijek blato. Tek krovovi^{S.X} su se malo zabijelili.

‘The snow is already falling in thick snowflakes. But there is still mud on the streets. Only the roofs turned a bit white.’

E.36 Na nebosklonu se je zabijelio mjesec^{S.X}.

‘The white moon appeared on the horizon.’

E.37 Četrdesetak godina poslije na istoimenom otočiću u Velikom jezeru zabijelio se samostan^{S.BLD}.

‘Around forty years later on the homonymous little island in the Big Lake there appeared a white convent.’

Finally, in this color verb group there is also an *iz-* variant. This variant is normally used in the meaning ‘to bleach’, however, this is not what we find in the corpus. The corpus examples show a very archaic use of the verb that is not recorded in the electronic dictionary of contemporary Croatian language (*Hrvatski jezični portal*).³³ It is found in the expression *izbijeliti zube* ‘to show one’s teeth’, and also, *izbijeliti oči* ‘to show one’s eyes’.

³³ This also points to some flaws in the Croatian National Corpus, as it contains some very old literary texts which no longer represent the contemporary Croatian language.

E.38 pas^{S.X} žalosno zatuli, izbijelivši zube^{O.zubi}, te se odvuče ukraj ceste

‘the dog howled sadly, showing his teeth, and dragged itself to the side of the road’

3.2.6. Crn

CRN 'black'								
N° of verbs	Prefixes		Transitivity			Prominent arguments	Irregularities	
345	∅	40	12%	tr.	7	18%	S.X - O.X	11
				intr.	0	0%		
				refl.	33	83%	S.X	
	po-	44	13%	tr.	4	9%	S.X - O.X	6
				intr.	40	91%	S.X - O.X	
				refl.	0	0%		
	za-	28	8%	tr.	9	32%	S.X - O.X	13
				intr.	0	0%		
				refl.	19	68%	S.X	
	o-	232	67%	tr.	232	0%	S.HUM - O.HUM	0
				intr.	0	0%		
				refl.	0%	0%		
others	1	0%						

The reflexive non-prefixed variant refers to various kinds of entities that are perceived as black.

E.39 Trotoari^{S.X} se crnili od vlage

‘The pavements were black from the moisture.’

E.40 Lijevo i desno crnio se niz^{S.X} ubogih kućica

‘On the left and right side there was a black line of miserable houses’

E.41 Nad vratima crnio se broj^{S.X} 20.

‘Above the door there was a black number 20.’

The non-prefixed variant is also used transitively, usually in the metaphorical meaning ‘to slender, to defame’. The perfective equivalent of this meaning is expressed by the *o-* variant (see further below).

E.42 Nažalost, nisam dobio dojam da me^{O.HUM} [oni^{S.HUM}] nisu crnili na najgori mogući način

‘Unfortunately, I didn't get the impression that they hadn't slandered me in the worst possible way’

The *po-* variant indicates more permanent changes of color. With human subjects it can have the meaning ‘to tan’.

E.43 rajčice^{S.X} su pocrnile [zbog nedostatka kalcija u zemlji]

‘tomatoes have blackened due to the lack of calcium in the ground’

E.44 Bore^{S.X} su na majčinom licu pocrnjele.

‘The wrinkles on the mother’s face have blackened.’

E.45 I on^{S.HUM} je, kao i njegovi radnici, pocrnio [od sunca].

‘He has, as have his workers, tanned in the sun.’

The *za-* variant is found in transitive and reflexive uses with diverse entities.

E.46 mrak^{S.X} je ispunio i zacrnio sve prostore^{O.X}...

‘darkness has filled and blackened all the spaces...’

E.47 a nekoliko dana kasnije čitavo nebo^{S.X} jednolično se zacrni prolijevajući silnu vodu na zemlju

‘a few days later the whole sky blackened uniformly, spilling tremendous amounts of water onto the ground’

E.48 u velikim ustima zacrni se samo jedan zub^{S.X} na donjoj jakoj čeljusti.

‘in the big mouth only one black tooth appeared in the strong lower jaw.’

This variant is also found in the expression *zacrnjeti se pred (or u) očima* (lit. “blacken in front of the eyes”), which is an equivalent of the English *black out*. It denotes a (momentary) loss of consciousness that, naturally, includes a loss of sight. This construction does not have a grammatical subject. The verb is always used in 3rd person singular and its participles have neuter form. The person who undergoes the process, i.e. the experiencer, is marked in the dative case (*meni* in the following example).

E.49 meni se u trenutku zacrnilo u očima i pao sam na zemlju

‘in one instant I blacked out and fell onto the ground’

Finally, there is the *o-* variant, which is by far the most prevalent variant within this group. As I have already noted, it is used in the metaphorical meaning ‘to slander, to defame’. This semantic shift is easily explained as the black color is frequently related to negative things and has negative connotations, in contrast to the white color which is related to positive things. So to make someone black comes to mean “to portray someone in a negative light”. The sheer number of occurrences of this variant in the corpus can be attributed to the fact that politicians, who are important protagonists of newspaper texts, often slander each other in politic struggles. The subject of the verb is the person who slanders and the object is the person who is slandered. Alternatively, arguments can be institutions or organizations, as groups of people.

E.50 Kada sam to otkrio javnosti, [oni^{S.HUM}] ocrnili su me^{O.HUM}.

‘When I revealed it to the public, they slandered me.’

E.51 pojedini koalicijski partneri^{S.HUM} uprežu se iz sve snage kako bi ocrnili SDP^{O.HUM} i stekli što bolje startne pozicije uoči novih lokalnih izbora

‘certain coalition partners are doing their best in order to defame SDP and achieve the best possible start positions before the new local elections’

3.3 COMPREHENSIVE ANALYSIS

3.3.1 Transitivity and meaning

Even though in theory each color verb variant could equally be used in any transitivity pattern, the corpus analysis shows that variants have a clear preference over a certain type of transitivity. Color verbs which bear no prefix, i.e. those in their simple, imperfective form, are predominantly reflexive, and so are verbs with the prefix *za-*. On the other hand, the *po-* variants are overwhelmingly intransitive and, importantly, **never** reflexive. Especially rare are the transitive uses of color verbs. These are most frequently associated with the *o-* variant, found mostly in the *green* and *black* verb groups. As there is such a low number of occurrences of transitive uses, I will not be able to elaborate on them further. However, there is much to say about reflexive and intransitive uses of color verb variants and the relations between the different variants.

I will first take a closer look at the reflexive non-prefixed variants. As I have already explained, the reflexive use of color verbs is associated with the intensive meaning, i.e. it attributes a certain color to an entity and, at the same time, emphasizes the intensity of the color. The color is perceived as standing out, being in the forefront. For example:

E.39 Trotoari^{S.X} se crnili od vlage

‘The pavements were black from the moisture’

There is, however, another purpose which the imperfective reflexive verbs can fulfill. Observe the following examples:

E.2 Po zidovima zgrade zelenjele su se puzavice^{S.PLT}

‘There were green creepers along the walls of the building’

E.26 nedaleko od Alfredova stana, bijeljela se malena crkvice^{S.BLD}

‘not far away from Alfred’s apartment, there was a white little church’

E.41 Nad vratima crnio se broj^{S.X} 20.

‘Above the door there was a black number 20.’

While in E.2, E.26 and E.41 color intensity remains an aspect of the verbal meaning, it is no longer the defining characteristic of the verb. Instead, the verb's purpose becomes to point to the existence of an entity (attributed with a certain color) at a certain location in space. In other words, the verb introduces an entity that has come to the attention of the speaker or observer. Such use is called **existential**. The location of the entity is specified by an adjunct of place, usually a prepositional phrase, and is followed by the verb and the subject. The reversed VS order of participants seems to be typical of existential clauses. It is not surprising that entities such as buildings are the common subjects of such verbs, as they clearly stand out in the environment. With regard to Russian, Israeli (1998) also notes that “-*sja* and non-*sja* verbs of color belong to the existential type of verbs”. However, the existential quality of the non-prefixed color verbs in Russian is always present and poses limitations on their use, while in Croatian it is not inherent to the verb. An example of such a limitation is the rule that color verbs can only be used in the 3rd person (Israeli, 1998). This is clearly not true for Croatian, as one can easily say *Zeleniš se kao gušter. Je li ti zlo?* ‘You are green as a lizard. Are you feeling sick?’ What I do find useful in the article on Russian is the distinction made between the VS uses, named existential, and SV uses, named **descriptive**. Therefore, as a conclusion, I would say that reflexive imperfective color verbs in Croatian have an intensive meaning and can be used either descriptively or existentially.

The non-prefixed variants, which are by nature imperfective, and the *za-* variants, which are perfective, share the property of being used mainly reflexively. This leads me to assume that they represent the imperfective and perfective aspect of the same meaning. This assumption will have to be tested on corpus examples. I have shown in the previous section that reflexive non-prefixed color verbs can function as existential verbs. The question now is if the reflexive *za-* variants are found in existential constructions. Consider the following:

E.36 Na nebosklonu se je zabijelio mjesec^{S.X}.

‘The white moon appeared on the horizon.’

E.37 Četrdesetak godina poslije na istoimenom otočiću u Velikom jezeru zabijelio se samostan^{S.BLD}.

‘Around forty years later on the homonymous little island in the Big Lake there appeared a white convent.’

E.48 u velikim ustima zacrni se samo jedan zub^{S.X} na donjoj jakoj čeljusti.

‘in the big mouth only one black tooth appeared in the strong lower jaw.’

It is evident that the *za-* variant is indeed used in the same type of constructions (prepositional phrase – verb – subject). While the non-prefixed variant entails a colored entity that exists in a certain location, the *za-* variant entails a colored entity that **appears** in a certain location. I believe that the *za-* variant expresses a perfective existential meaning, which I shall call alternatively the **inceptive** existential meaning. If the existential meaning supposes that something exists, then the inceptive existential meaning supposes that something begins to exist, i.e. comes to existence. This coming into existence can be material, realized in the real world at a certain time (E.36 and E.37), or cognitive, realized in the perception of the speaker or observer in the moment when he or she spotted the described entity (E.48). I should note that the intensity of color has not been lost as a component of the verb’s meaning and is still present in the reflexive *za-* variant.

Next I have to consider what is the relation between the descriptive (SV) uses of non-prefixed variants and the corresponding uses of *za-* variants. Here are the examples:

E.6 s prvom kišom sve^{S.X} će se zazelenjeti.

‘with the first rain everything will become green.’

E.35 Već snijeg pada u gustim pahuljama. No na ulicama je još uvijek blato. Tek krovovi^{S.X} su se malo zabijelili.

‘The snow is already falling in thick snowflakes. But there is still mud on the streets. Only the roofs became a bit white.’

E.47 nekoliko dana kasnije čitavo nebo^{S.X} jednolično se zacrni prolijevajući silnu vodu na zemlju

‘a few days later the whole sky blackened uniformly, spilling tremendous amounts of water onto the ground’

The indicated examples demonstrate that the *za-* variants do not merely state the color of an entity, as the non-prefixed variants do, but also seem to entail a change of state. This would make them similar to the intransitive *po-* variants, which always have inchoative meaning. In order to make a comparison and test this assumption I will now introduce examples of the *po-* variants.

E.29 U jednom uglu [bila je] klupska garnitura od zelene kože^{S.X}, koja je već pobijelila od duge upotrebe.

‘In one corner there was a set of padded furniture made of green leather, that had already whitened from years of use.’

E.30 Absint^{S.X} pobijeli i postane neproziran kada voda poremeti omjer alkohola i biljnog ekstrakta

‘Absinthe whitens and becomes transparent when water disrupts the ratio of alcohol and the herbal extract.’

E.43 rajčice su pocrnile zbog nedostatka kalcija u zemlji

‘tomatoes have blackened due to the lack of calcium in the ground’

E.44 Bore su na majčinom licu pocrnjele.

‘The wrinkles on the mother’s face have blackened.’

I believe that the events described in these examples are conceptualized as **externally caused changes of state**. There is an external factor, that may or may not be explicitly stated, which causes an entity to change from an initial state to a resulting state. The part of the event which is encoded by the verb is the resulting state, which is also the main point of interest in the utterance. The duration and reversibility of the process do not matter – the change may be gradual or sudden, permanent or transitory – what is important is that the result of the process is a new state: the absinthe *has whitened* – therefore it is now *white*, the tomatoes *have blackened* – therefore they are now *black*. The other point of interest is the cause, which is usually expressed by a prepositional phrase.³⁴

The question is does the previous explanation apply to the examples with the *za*- variant. If *rajčice su pocrnile* ‘tomatoes have blackened’ necessarily implies that *rajčice su crne* ‘tomatoes are black’, does *nebo se zacrnilo* necessarily imply that *nebo je crno* ‘the sky is black’? Even though the English translations do not reflect this, the second assumption does not hold. The proposition *nebo je (sada) crno* ‘the sky is (now) black’ is not deducible from *nebo se zacrnilo* ‘the sky blackened’, the one does not proceed from the other. Before I offer

³⁴ The subordinate clause in E.30, introduced by the conjunction *when*, has a temporal **and** a causal meaning.

an explanation for this disparity I will perform another test using the time adverb *zauvijek* ‘forever’. If I try to expand the sentences with the *po-* and *za-* variants with *zauvijek* ‘forever’, I achieve different results. While the sentences with the *po-* variant are compatible with *forever*: *koža je zauvijek pobijelila od duge upotrebe* ‘the leather has whitened forever from years of use’, *bore su zauvijek pocrnjele* ‘the wrinkles have blackened forever’, the sentences with the *za-* variant are not: **krovovi su se zauvijek zabijelili* ‘the roofs have whitened forever’, **nebo se zauvijek zacrnilo* ‘the sky has blackened forever’.

My assumption is that the *za-* variants do not encode a resulting state. In fact, I believe they are not change of state verbs. They do not conceptualize a change between two states, but a single, punctual event that is **internally caused**.³⁵ The observed change of color is seen as a single action performed by a certain entity. The ability to perform the action is perceived as an inherent ability of the entity in question: it is natural for a field to become green due to plant growth, it is natural for the environment to become white in winter due to snow, and it is natural for the sky to blacken when there is a storm.³⁶ It is for this reason that the sentences with the *za-* variant often lack a causal component. With regard to the existential use of the *za-* variant, discussed above, the change of color does not take place at all: in the example E.48 the tooth was black before and after the event, but it is in the moment of uttering the sentence that the tooth came to the attention of the observer.

Fortunately, this type of verbs has already been identified and described in literature as **semelfactive verbs**.³⁷ Semelfactive verbs describe instantaneous events that do not involve a definite change, such as *beep*, *blink*, *cough*, and *tap* (Smith 1991). Interestingly, according to Levin (1993) this category includes verbs of light emission, such as *flash*, *flicker*, *gleam*, *glisten*, etc., which I have previously likened to the intensive use of reflexive color verbs. The reason of the similarity between these two groups has now become clear.

The following table lists all the relevant features of color verbs that I have identified and analyzed and demonstrates how they are distributed between the different variants

³⁵ “Internally caused, verbs [...] describe eventualities which are brought about by the internal characteristics of an event participant. Such characteristics are the will of an agent, the physical properties of an event participant, and emotional reactions.” (Levin & Rappaport, 1995)

³⁶ This also explains why *zacrvenjeti se* and not *poocrvenjeti* is the closest equivalent of the English verb *to blush*: blushing is something that the face tends to do.

³⁷ Levin (2000) writes: “I use the term “semelfactive verb” to refer to a verb which allows a semelfactive interpretation, recognizing that such a verb also permits repetitive, durative uses.”

Table 7: Color verb oppositions

	∅- (SV)	∅- (VS)	za- (SV)	za- (VS)	po-
Perfective			+	+	+
Imperfective	+	+			
Intransitive					+
Reflexive	+	+	+	+	
Inchoative					+
Intensive	+	+	+	+	
Descriptive	+				
Existential		+			
Semelfactive			+		
Inceptive ex.				+	

3.3.2 IRREGULARITIES

By *irregularities* I refer to the discrepancy between the transitivity of the verb, as realized in a sentence, and the suffix it uses. As I have noted before, the normative Croatian Grammar (Barić et al., 2005) assigns the suffix a primary role in determining the transitivity of color verbs as well as some other deadjectival verbs. The *-i-* suffix is used to make transitive verbs, while the *-je-* suffix is used to make intransitive and reflexive verbs. In my research I found 156 instances of discrepancy out of 864 total occurrences of selected color verbs, which makes 18%. This is not a large percentage, but it is still relatively high. I am sure the number would be higher if everyday language (spoken and computer-mediated) were to be analyzed. This problem has been noticed by language experts and there are many language guides where speakers are encouraged to differentiate between the two forms. For example, this advice is given in the online collection of language tips by the *Institute for Croatian Language and Linguistics*.³⁸

Each and every case of irregularity found in the corpus consists in substituting the *-je-* suffix with the *-i-* suffix, and never the other way around. This is not surprising if we remember that verbal forms with the *-je-* suffix have merged with the *-i-* forms in several paradigms, most importantly the present tense and the masculine singular form of the perfect tense. It is only logical that the *-i-* forms would spread further by analogy. It is not only color verbs and

³⁸ See *Bijeliti / bijeljati (se), crveniti / crvenjati (se) itd.* in the references (in Croatian).

deadjectival verbs that are experiencing this change, it is a much wider phenomena. The same type of convergence is taking place between the verb groups in which *-i-* and *-je-* are in fact not derivational suffixes but thematic suffixes. Namely, the 1st type of the 3rd verb class, which alternates between *-i-* and *-je-*, is converging with the 4th class, which consistently has *-i-* (see Table 8 below).

Table 8

4th class	3rd class, 1st type	Analogical forms
<i>misliti</i> ‘to think’	<i>željeti</i> ‘fly’	<i>želiti</i>
<i>mislilo je</i> ‘he thought’	<i>želio je</i> ‘he wanted’	<i>želio sam</i>
<i>mislila je</i> ‘she thought’	<i>željela je</i> ‘she wanted’	<i>želila je</i>
<i>mislilo je</i> ‘it thought’	<i>željelo je</i> ‘it wanted’	<i>želilo je</i>
<i>mislili su</i> ‘they (m.) thought’	<i>željeli su</i> ‘they (m.) wanted’	<i>želili su</i>
<i>mislile su</i> ‘they (f.) thought’	<i>željele su</i> ‘they (f.) wanted’	<i>želile su</i>
<i>mislila su</i> ‘they (n.) thought’	<i>željela su</i> ‘they (n.) wanted’	<i>želila su</i>

4. CONCLUSION

The main goal of the thesis was to study the various aspects of color verbs, their functioning and their use. The corpus analysis has managed to provide a rather detailed description of different color verb groups. I believe the results of this analysis might serve as a point of departure for lexicographic work. Color verbs have not been treated with much care in dictionaries and it would be useful to modify their definitions so they better reflect their semantic nuances, as well as to indicate some prominent metaphorical uses.

The **comprehensive** analysis, on the other hand, entailed a more systematic approach to color verbs and lead to the formulation of a system of binary features that characterize different color verb variants, determine their mutual relationships and situate them within the wider system. Additionally, it has been shown that the use of color verbs in actual language may deviate from the standard language norm, namely in the use of the suffixes *-i-* and *-je-*.

This thesis has shown the possibilities that the system of color verbs provides. However, it has also given insight into the complexities of the Croatian verbal system as a whole. Further research may explore whether the findings on color verbs have correspondences in other verb classes and how do these findings contribute to our general knowledge on the topics such as prefixation and reflexivization. Alternatively, the study might inspire researchers of other languages to look into their own color verb systems and make comparisons, as this is an area that has seldom been explored.

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