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A SEMANTIC ANALYSIS OF THE VERBAL PREFIX *o(b)*- IN CROATIAN

This article analyzes the verbal prefix *o(b)*- in Croatian from a cognitive linguistic perspective, focusing on how its apparently different meanings relate to each other, and the extensions of its spatial meanings into non-spatial domains. The prototypical meaning of verbs prefixed with *o(b)*- involves a general notion of circular movement realized in concrete spatial realms: a trajector (TR) performs a circular movement around a landmark (LM). This spatial schema of circular movement can be illustrated by the motion verb *optrčati* 'make a full circle by running around a certain area'. Our analysis aims to show that the central meaning, MOVE AROUND (AN OBJECT), has a special status in the meaning network because it directly or indirectly motivates all of the other meanings. We show that the various meanings of *o(b)*-verbs are not a random collection of unrelated senses, but form a semantic network in which individual meanings emerge via metaphorical and metonymic extensions and relate to systematic and partially predictable applications of concrete spatial relations to abstract ideas.

KEYWORDS: *verbal prefixes, o(b)- in Croatian, cognitive linguistics*

I. INTRODUCTION

We aim to present the meaning of the verbal prefix *o(b)*-¹ in Croatian as a network of interrelated meanings. Our analysis is based on an extensive database of *o(b)*-verbs extracted from dictionaries and corpora available online, as well as verbs found on the internet (see Section 2 for more details). Our examination of the database showed that most non-spatial meanings of *o(b)*- verbs are directly or indirectly related to a general image schema of circular movement in space. We noticed that the extensions of the prototypical meaning are of two types and relate to two cognitive mechanisms: metaphor and metonymy. Metaphorical extensions occur when a spatial schema is mapped onto a different, more abstract domain (e.g., time, human relations, qualities, etc.). In the case of metonymic extensions, an image schema is reduced to its parts, or it is re-interpreted with a different focus. Many more of the meaning relations in our network are based on metaphorical extensions than on metonymic ones.

¹ *Ob-* is sometimes realized as *oba-* (before consonant groups) and *op-* (before voiceless consonants).

This introductory section provides some remarks on prefixes in cognitive linguistics in general and cognitive linguistic accounts of Slavic prefixes in particular. Section 2 provides observations on our material and method, including reflections on the structure of our database, and remarks on the derivational patterns of *o(b)*-verbs. Section 3 presents the radial network of the prefix *o(b)*-, its prototypical, central meaning and other meanings, as well as examples of verbs belonging to different meaning subgroups. It discusses the relation of all the meanings identified, especially concentrating on the relation of the prototypical meaning to other meanings in the network. We also provide basic information on constructions in which our meaning subgroups occur.² Section 4 presents some conclusions and some suggestions for further research.

1.1. PREFIXES IN COGNITIVE LINGUISTICS AND IN COGNITIVE EXPLORATIONS OF SLAVIC

Our analysis follows the theoretical premises of cognitive linguistics (e.g., Lindner 1981; Janda 1986; Tabakowska 2003; Przybylska 2006; Klikovac 2006; Tchizmarova 2005, 2006; Belaj 2008; Šarić 2008), which approach spatial particles as networks of interrelated meanings. Cognitive linguistics assumes that category members (i.e., various meanings in a meaning network) share various sets of features with each other. This approach allows fuzzy boundaries among concepts, and identifies more or less prototypical meanings of language units: other meanings directly or less directly relate to these prototypical meanings (see, e.g., Langacker 1987; Tyler & Evans 2003). Image schemas in cognitive linguistics depict two basic entities: a trajector (TR) and a landmark (LM), respectively defined by Langacker (1987) as the figure within a relational profile and another salient entity in a relational predication, prototypically providing a point of reference for locating the TR.³ An image schema is "a cognitive representation comprising a generalization over perceived similarities among instances of usage" (Barlow & Kemmer 2000: viii). Image schemas lack specificity and content, which makes them highly flexible preconceptual and primitive patterns used for reasoning (Johnson 1987: 30). In this analysis, we assume that the image schema of circular movement is traceable in the meaning of all the *o(b)*-verbs. However, the central meaning of circular movement experiences various transformations. *O(b)*-verbs can differ considerably in their specific sub-meanings, can be transitive or intransitive, and can appear in different construction types; however, in all their usage contexts the idea of circular movement is somewhat present, although it is admittedly very abstract in some cases.

We focus on relations between apparently unrelated meanings of verbs prefixed with *o(b)*-, paying special attention to how spatial meanings relate to non-spatial

² An extensive account of this issue has to be left for a separate future analysis.

³ In a simple spatial scenario an "unmarked choice of trajector" corresponds to "the entity that would normally be construed as the figure on general perceptual grounds . . . an object moving in a relation to a fixed setting is almost invariably perceived as the figure in the scene" (Langacker 1987: 233–244). The grammatical relation of subject versus object instantiates the figure-versus-ground asymmetry, and direct objects would thus be LMs in Langacker's view (see Langacker 1987: 234). However, analyses of transitive constructions with prefixed verbs in Slavic view the constellation differently; see footnote 32.

ones, and to metaphorical transformations and abstractions that are responsible for some meanings of *o(b)*-verbs. We first look at the semantic profile of the prefix *o(b)*-in verbs expressing spatial motion, and then at the profile of verbs with a less obvious spatial profile, or abstract or metaphorical meanings: significantly, in most cases, the same verbs have a concrete and a metaphorical meaning. We identify and explain the relations between several meanings of the prefix *o(b)*- (see Section 3). We examine how the semantic profile of *o(b)*- in motion contexts influences its semantics in non-spatial contexts. Our approach to the meaning of *o(b)*- concentrates on meaning extensions through metaphor and metonymy: these extensions can explain the links between apparently unrelated meanings of this prefix.

Our aim (is to analyze the prefix *o(b)*- and its semantic contribution to the resulting prefixed forms, which means trying to "isolate" the meaning of the prefix *o(b)*- from the meaning of the specific bases it combines with, at least on the analytical level. When attached to simplex verbs, the prefix *o(b)*- obviously adds a new meaning to the base verb (e.g., *trčati* 'run' – *optrčati* 'run around sth'); in some other cases, its meaning overlaps with the base verb's meaning (e.g., *kružiti* 'circle' – *okružiti* 'encircle'), which creates an illusion of semantic "emptiness" (see the discussion of the Overlap Hypothesis and Empty Prefix Hypothesis in Janda et al. (2013), and its applications to Croatian in Šarić (2014)). These different constellations have to be considered when approaching the semantics of this prefix, as well as the fact that *o(b)*- is part of many prefixed verbs with nominal and adjectival bases.

1.2. *O(B)*- IN RESEARCH TO DATE AND SLAVIC COGNITIVE LINGUISTICS

The Croatian verbal prefix *o(b)*- has not received much attention in research to date.⁴ Our study is the first to work out the meaning network of this verbal prefix based on an extensive database.

Basic information about the meaning of *o(b)*- can be found in grammars and word-formation manuals (e.g., Babić 1986: 483), and sometimes in dictionaries (e.g., in the online dictionary *Hrvatski jezični portal*, hereinafter HJP).⁵ The existing manuals as a rule provide no information about the relation of prefixes' different meanings or about the relation between their spatial and non-spatial meanings. Furthermore, there are no clear criteria for ranking/ordering the individual meanings. Interestingly, the manuals do not agree on whether *o*- and *ob*- are allomorphs or two prefixes. Babić (1986: 483) approaches *o*- and *ob*- as two prefixes, singling out two meanings of *o*-⁶ and only one of *ob*-,⁷ and stating that other meanings (e.g., perfectivity) are possible, although these rarely occur. HJP considers *o(b)*- to be a

⁴ The preposition *o* is analyzed by Brala-Vukanović (2011), who provides a few remarks on *o(b)*- verbs, briefly addressing the combinability of some *o*- verbs with the prepositions *o* and *oko*.

⁵ Available at: <http://hjp.srce.hr/index.php?show=search>. HJP is based on six manuals, including Anić (see <http://hjp.srce.hr/index.php?show=baza>).

⁶ (a) the action of the base verb revolves around something . . . encompasses all its sides, (b) bring forth to a result.

⁷ Verbs with the prefix *ob*- imply that the action of the base verb revolves around something, from all its sides, in a concrete and abstract meaning.

single prefix, and lists four meanings of *o(b)-* in verbs: 1) material and non-material encompassing of an object by an action; 2a) bringing into a state by fulfillment of an action; b) supply, burden, exposure to a process; c) finishing an action; 3) doing on a surface; and 4) being encompassed by an action or brought into a state.⁸ The link between these meanings is not indicated, although some obvious relations can be established on the basis of the definition. For example, meanings 1 and 4 seem to be related because they both imply "encompassing." Meaning 2, on the other hand, cluster verbs that seem rather different at first glance (e.g., *ohrabriti se* 'become brave', *olistati* 'leaf', *oanajiti* 'lamb').

Our hypothesis is that *o-* and *ob-* are a semantic unity; that is, allomorphs of the same prefix. In the approach to the question whether *o-* and *ob-* are semantically one unit or two different prefixes, we consider their meaning similarities/differences to be a decisive factor, in addition to their common etymology, and tendencies in the historical and areal distribution of the two forms.

For the hypothesis of *ob-* and *o-* as two units to be acceptable, their central meaning should not overlap. However, their central meaning does overlap in Croatian, as it does in other Slavic languages (see Baydimirova 2010; Będkowska-Kopczyk & Lewandowski 2012; Endresen et al. forthcoming). The main supporting argument for the semantic unity of *o-* and *ob-*, apart from their common etymology, is the central meaning traceable in our extensive database: for both *o-* and *ob-*, it is the same underlying meaning of circular movement that experiences various extensions. These extensions result in some meanings whose relation to the central meaning sometimes seems less obvious or even non-existent. Both *o-* and *ob-* occur in spatial contexts with the same preposition (*oko*)*lo*, with which they share their central spatial meaning (e.g., *Mladić . . . je sam oplovio oko svijeta i oborio rekord.* (INT)⁹ 'A young man . . . sailed alone around the world and broke a record'); *Tri je puta oprčao oko grada.* . . (INT) 'He ran around the town three times . . .').

The coincidence of the central meaning of *o-* and *ob-* is confirmed even by the analyses of Croatian that formally consider them to be two prefixes: for example, Babić (1986: 483) provides an almost identical definition for both *o-* and *ob-*: *o-*: "the action of the base verb revolves around something. . . encompasses all its sides"; *ob-*: "the action of the base verb revolves around something, from all its sides."¹⁰ The only apparent difference between the two in Babić's account is in his ascribing a resultative meaning to *o-*. However, *ob-* also has a resultative meaning, and so this component cannot be proof of the existence of two units. Prefixes that are considered different units in Slavic do not share their central meanings: the central meaning of two or more different but semantically related prefixed units sufficiently diverges, although prefixes can share peripheral meanings and overlap in the peripheral meaning domains.

⁸ See http://hjp.novi-liber.hr/index.php?show=search_by_id&cid=eFjXhE%3D&keyword=ob.

⁹ Our examples are found either on the Internet (= INT) or in the corpus *Hrvatska jezična riznica* (= HJR, <http://riznica.ihj.hr/>).

¹⁰ *O-* and *ob-* are also treated as different prefixes in Silić and Pranjković (2005: 148), but the authors provide identical definitions for both of them. Barić et al. (1997: 381–382) treat *o-* and *ob-* as the same prefix.

Etymological information is also of utmost importance. Skok (1988: 533) describes the common Slavic prepositions *o* and *ob* as variants, providing different parts of speech as evidence; for instance, *obdan* 'during the day', *obdanište* 'nursery', and *omalen* 'quite small'. Trubačev (2001) provides comprehensive etymological information comparing verbs with Proto-Slavic **ob-* in different Slavic languages, including information about different historical periods and dialects of Slavic: his numerous sources show that many otherwise identical verbs have *ob-* in some Slavic languages, and *o-* in others, and that both forms exist in parallel in some languages (either as synonyms in modern languages, or as synonyms between dialects, or one form is archaic and another one modern).¹¹ Our approach also coincides with findings for other Slavic languages: none of the existing analyses of Slavic (see below) question the semantic unity of *o-* and *ob-*. Furthermore, all of the meanings we analyze in Section 3 are attested both with *o-* verbs and with verbs prefixed with *ob-* (*op-*, *oba-*). In addition to what has already been mentioned, this is the main reason why we treat *o-* and *ob-* as the same prefix.

A few cognitive linguistic studies analyze prefixes equivalent to the Croatian *o(b)-* in different Slavic languages: Polish, Russian, and Slovenian. Twardzisz (1994) identifies six configurations of the Polish prefix *ob(e)-* in verbs. Some of these configurations have metaphorically extended variants, which results in a total of fourteen configurations, many of which relate to the context and the base verb's meanings. The most prominent and central configuration is the notion of circularity or roundness, in which a TR prototypically moves around a LM. Another configuration at the semantic center of the meaning network is one in which a TR performs an action around a LM so that the LM is either "wrapped" or "framed" (Twardzisz 1994: 221–225).

In their corpus-based analysis of Polish and Slovenian *o(b)-*, Będkowska-Kopczyk and Lewandowski (2012) provide statistical evidence for the meanings of Polish and Slovenian verbs prefixed with *ob(-)*. The authors identify eleven meanings for Polish verbs, and ten meanings for Slovenian verbs. The main difference between Slovenian and Polish seems to relate to the meaning "metaphorical remaining in proximity": this meaning (not attested at all in Polish) is identified in 162 Slovenian verbs.

¹¹ For example, Proto-Slavic **oblupiti* is realized as *olupi* in Macedonian and *olupiti* in Croatian, as well as Slovenian (however, *oblupiti* is an older Slovenian form). In Czech, both *obloupiti* and *oloupiti* exist. Whereas Old Slovak has *oblúpiti*, *oblúpit'* and *olúpit'*, modern Slovak has *oblúpit'* and *olúpit'*. Both forms with *ob-* and *o-* are attested in Russian (*oblupit'* and *olupit'*), as well as in Ukrainian (*oblupiti* and *olupiti*). In all the languages (if small differences in definitions by different sources are neglected), both *ob-* and *o-* forms refer to removing a surface layer of something, most frequently to removing skin and bark (see Trubačev 2001: 30). There are many more similar examples, such as Proto-Slavic **oblomiti*, which appears with both *ob-* and *o-* in individual languages (e.g., Czech and Slovenian), and in others with *ob-* only (e.g., Russian and Ukrainian; see Trubačev 2001: 19–20). The variation of *ob-* and *o-* across Slavic and within individual Slavic languages is not limited to the group of verbs implying removing something from the surface. **Oblučiti* is realized in Old Church Slavic as *olučiti*, in Old Czech *olúčiti* is attested, and in Russian *oblučit' bereg* ('go around with a torch to hunt crabs'); the general meaning in all the languages is 'light up, illuminate', whereas in some it has extended metaphorically to 'explain' (e.g., Old Czech; see Trubačev (2001: 28). Other examples are **obmakati* 'soak, wet, moisten' (Old Church Slavic *omakati*, Macedonian *omaka*, Russian *obmakat'* (dialect *omakat'*; see Trubačev 2001: 40); **obmaliti* 'make smaller' (Bulg. dialect *ómala*, *omála*, Old Russian *obmaliti*, Russian dialect *obmálit'* and *omálit'*, and various Serbo-Croatian dialects have *omalit(i)* (see Trubačev 2001: 41).

In her corpus- and experiment-based study, Baydimirova (2010) analyses the Russian prefixes *o-*, *ob-*, and *obo-*, indicating that they can be synonyms, but can also carry strikingly different meanings that even yield minimal pairs (e.g., *o-sudit'* 'condemn' vs. *ob-sudit'* 'discuss'; see Baydimirova 2010: iv). The author works out a common semantic network with fifteen interrelated meanings of *o-*, *ob-*, and *obo-*, defining "move around an object" as the central meaning in the network (see Baydimirova 2010: 42), and showing that the meanings of the three forms that seem unrelated are actually parts of a single semantic network and that all of them can be expressed by each of the three prefixes.

The findings by Twardzisz (1994), Baydimirova (2010), and Będkowska-Kopczyk and Lewandowski (2012) are highly relevant for our analysis and are taken into consideration. We refer to these analyses when working out our semantic network¹² and point towards differences we noticed in the network of the Croatian prefix.

We pay particular attention to how seemingly less-related meanings of *o(b)-* relate to each other, and how they all relate to the central spatial meaning. Such an approach to spatial particles has clear advantages in teaching contexts: understanding paths of meaning extensions from the central meaning helps language learners to see a logical relation in the chain of what otherwise may seem to be a random collection of unrelated meanings.

2. MATERIAL AND METHOD

We base our analysis on a database of 564 verbs prefixed with *o(b)-*. The initial source of the database was a contemporary dictionary by Bujas (2001). Bujas lists the most frequently used verbs in Croatian written and colloquial usage. Additional verbs were collected from Anić (1998), HJP, and the internet. Currently, our database contains one hundred verbs prefixed with *ob-*, *op-*, and *oba-*, and 464 verbs prefixed with *o-*.

After collecting the *o(b)-*verbs from the dictionaries, we examined which of these verbs appear in the Croatian National Corpus (CNC, in its 2.5 and 3.0 versions) and added frequencies of attested verbs in both corpus versions. We noticed that many verbs frequently used in everyday language and found on the internet (some of which were also attested in dictionaries) were not attested in CNC at all. The reason is limited genres included in CNC; that is, the fact that

¹² Belaj (2008) applies a different approach in his cognitive linguistic study of eight Croatian prefixes, relating a single schematic meaning to each prefix examined and analyzing how specific prefix meanings are related to these schematic meanings. Both approaches, the *schematic meaning* approach and the *semantic network* approach, are suitable for analyzing spatial particles. Moreover, we argue that both yield similar and comparable results. The network approach chosen in this analysis is related to the methodology accepted in a project that this analysis is part of: Space in South Slavic. Part of the project is explicitly concerned with integrating real-language data into the semantic network approach, and with applications of the semantic network approach in teaching and learning spatial language.

sources representing some language registers are not included in CNC at all. Another problem encountered was non-distinction of homographs in the corpus.¹³

We decided to use a combination of sources in order to obtain as many verbs as possible used in contemporary language that can provide an overview of all semantic subtypes. However, we are aware of the fact that our database still lacks some more or less frequent *o(b)*-verbs.¹⁴

We decided to primarily include perfective verbs in the database. These are derived either from simplex verbs (imperfective or perfective; e.g., *raditi* 'work, do' – *obraditi* 'work thoroughly, re-do treat, work on'; *sjesti* 'sit' – *opsjesti* 'surround'), or from nouns, adjectives, or prepositional phrases (e.g., *istina* 'truth' – *obistiniti se* 'come true', *zelen* 'green' – *ozeleniti* 'become green', *bez glave* (or *bezglav*) 'headless' – *obezglaviti* 'deprive of a leader'). Some verbs, such as *ozeleniti*, have double motivation; that is, they can be related to a nominal and verbal base (*zelen* 'green', *zeleniti* 'make green'), which also influences their semantic profile (see Section 3). In some cases, perfective *o(b)*-verbs allow secondary imperfectivization (e.g., *obigrati* 'dance around' (< *igrati* 'dance; play') → secondary impf. *obigravati*; *obistiniti se* 'become true' (< *istina* 'truth'), → secondary impf. *obistinjavati (se)*).¹⁵ In some cases, the base seems to be verbal, but simplex verbs do not exist in the modern language (e.g., *obiknuti* 'get used' relates to Proto-Slavic *vyknŋti*).¹⁶ A few verbs in the database are synchronically opaque (e.g., *obmanuti* 'deceive').¹⁷ However, the semantic contribution of the prefix is visible in such cases as well.

We have not included imperfective *o(b)*-verbs in our database in the (prevailing) cases in which imperfectives are very similar to perfectives (e.g., *obamrijeti* 'become numb' is included, but not *obamirati*; *obasuti* 'shower' is included, but not *obasipati*) nor secondary imperfectives (e.g., *obistiniti se* is included, but not *obistinjavati se* 'come true'). As a rule, secondary imperfectives do not differ from their prefixed perfectives as regards the meaning contribution of the prefix. However, we have included some (secondary) imperfectives whose meaning has developed in a slightly different direction compared to the primary imperfectives (e.g., both *obigrati* 'go, dance around' and *obigravati* 'go, dance around; hover over, importune' are included).

¹³ For example, *obaviti* 'accomplish', and *obaviti* 'wrap' are not distinguished in the corpus. We also noticed that usage frequencies of the meanings of certain verbs in the corpus do not always correspond to what the dictionaries list as primary meanings: some verbs more frequently appear in the meanings suggested as secondary in dictionaries.

¹⁴ The work on supplementing the database with additional verbs is still in progress.

¹⁵ Verbal derivatives of the type *obigrati* would belong to Janda's (2007) group of prefixed verbs labeled "specialized perfectives": in similar cases, prefixation significantly modifies the meaning of the base (compare *obigrati* and *zaigrati*). However, in some other cases prefixation with *o(b)*- results in what Janda labels "natural perfectives": in these perfectives, the meaning of the base verb and the prefix overlap, creating an illusion of the prefix's emptiness. As a rule, secondary imperfectivization is blocked in BCS in these cases (e.g., *čistiti* 'clean' → natural perfective *očistiti* 'clean'; the secondary imperfective **očišćivati* is not attested). The situation is different, for example, in Russian (see Janda et al. 2013).

¹⁶ Compare HJP: http://hjp.novi-liber.hr/index.php?show=search_by_id&cid=eF9kXhI%3D&keyword=o%20biknuti; http://hjp.novi-liber.hr/index.php?show=search_by_id&cid=eF9kUBI%3D&keyword=naviknuti.

¹⁷ HJP relates the verb to the nouns *obmana* and *mana*, and *mana* to Common Slavic **mana* (Russ. *maná* 'deception'). See HJP http://hjp.novi-liber.hr/index.php?show=search_by_id&cid=e1xlURc%3D&keyword=mana.

In a few cases, we noticed alternation of *o-* and *ob-* with the same base — for example, *ovjesiti* – *objesiti* ‘hang (up)’ — without any apparent meaning difference in some cases, and with (slightly) different meaning in some other cases (e.g., *olizati* – *oblizati* ‘lick (all) around’).¹⁸

In some verbs in our database, *ob-* combines with an already prefixed unit. For instance, there are nine verbs with *o-ne-* derived from adjectives or nouns with the prefix *ne-* (e.g., *nečist* ‘unclean, dirty’ – *onečistiti (se)* ‘make/become dirty’), and six verbs¹⁹ with *o-bez-* (*o-bes-*, *o-beš-*) derived from either adjectives or prepositional phrases with *bez-* (e.g., *bez glave*, *bezglav* ‘headless’ → *obezglaviti* ‘deprive of a leader’).

The etymology of a few verbs in our database is not clear: it is not certain whether these verbs are prefixed with *o(b)-* or *od-*. A relevant detail is that the prefix *od-* (*ot-*) is reduced to *o-* with base verbs beginning in *d*. Several verbs that most probably etymologically relate to *od-* were removed from the database. Nonetheless, it is worth noting that in some verbs (e.g., *oderati*, *odratiti*, *odrijeti* ‘tear off’) both *o(b)-* and *od-* make perfect sense (we address this issue in Section 3 in greater detail).

After editing it, we examined the entire database and identified frequently occurring meanings (see Section 3). At an early stage of our analysis, we aimed to identify a core/dominant meaning for all the verbs and provide them with corresponding semantic labels (e.g., MOVE AROUND (AN OBJECT); SURROUND/ ENCLOSE; COVER, ACQUIRE A NEW FEATURE, etc.). However, the majority of the verbs are polysemous. In some cases (e.g., *oploviti* ‘sail around’), it was possible to single out one primary/dominant meaning, but in some other cases this was impossible because a few meanings obviously coexist and blend (e.g., *oblijepiti* ‘glue (all over)’ can imply COVER, ENVELOP, and AFFECT A SURFACE because the verb implies gluing all sides of an object). We are also aware of the fact that the categorization often depends on an individual’s perspective. We realized that singling out only one meaning as dominant would make the meaning network clear, but we argue that it would also make it artificial. If we reduce polysemous verbs to one of their meanings only, even to a dominant one, we provide an artificial image. For example, in some contexts *obići* denotes MOVE AROUND (and implies a circular movement or a movement resembling a circle (e.g., in the prepositional construction *obići oko kuće* ‘go around the house’), and in some other PASS BY (implying movement resembling an arc; e.g., in the accusative construction *obići prepreku* literally, ‘go around an obstacle’). However, this verb also seems to carry the meaning AFFECT MANY (when it implies affecting a circle of objects, visiting many places or people; e.g., in *obići svu rodbinu* ‘visit all relatives’).²⁰ We have noticed that some meanings identified for other Slavic languages by previous research are contextually dependent in Croatian:

¹⁸ We reflect on this and similar cases later in the article.

¹⁹ Checking *o-bez-* (and *o-bes-*, *o-beš-*) in the corpus Croatian Language Repository (<http://riznica.ihj.hr/>) yielded additional fairly frequent verbs (around twenty altogether; the number of verbs could not be detected automatically).

²⁰ In Croatian, this meaning seems to be context-dependent with self-motion verbs, and we do not attribute it to the prefix.

isolated verbs could be placed into other, less specific categories.²¹ In this article we work with such less specific categories, trying to ignore broader contextual information.

The literature not only classifies *o(b)*-verbs into several meaning groups, but also provides statistical evidence for how frequent these groups are (e.g., Baydimirova 2010; Będkowska-Kopczyk & Lewandowski 2012). This method poses many questions. For example, in Baydimirova (2010), some Russian *o(b)*-verbs appear in more than one group, but some other verbs, although they are not monosemous, are assigned one meaning only.

Because of the polysemy of many verbs in our database, stating that a certain percentage of verbs belong to meanings A, B, C, and so on would be inaccurate and confusing because many of the verbs carry more than one of these meanings. Nonetheless, it does make sense to examine in how many verbs a single meaning occurs: some meanings are certainly related to a great number of verbs in our database (e.g., the meaning IMPOSE/ACQUIRE A NEW FEATURE), and some to a few verbs only (e.g., TURN AROUND; see Section 3).

3. THE MEANING NETWORK OF *O(B)*-

Figure 1 presents the semantic network of *o(b)*-verbs based on an examination of all the verbs in our database.

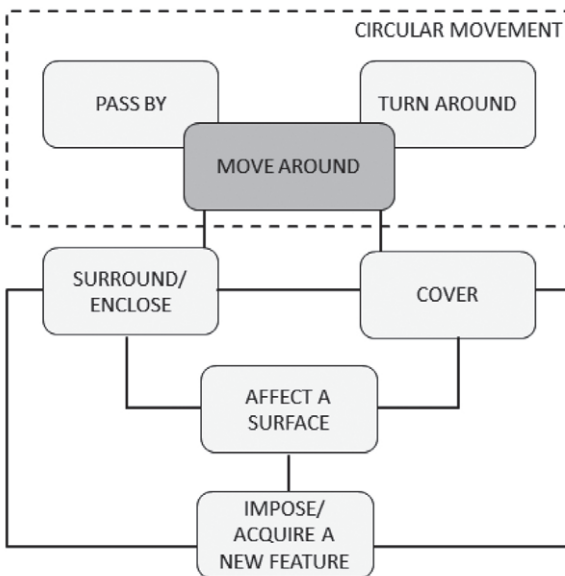


Figure 1: The meaning network of *o(b)*-

²¹ Będkowska-Kopczyk and Lewandowski (2012) define VISIT MANY PLACES as a separate meaning in Polish and Slovenian. Baydimirova (2010: 51) defines AFFECT A NUMBER OF OBJECTS as a separate meaning of *o(b)*- in Russian.

The solid lines connect the prototype and sub-meanings, as well as individual sub-meanings, indicating direct meaning relations. The center of the network (the darker shape) is the prototypical/central meaning of circular movement, which we label MOVE AROUND (AN OBJECT). We have observed that all the prefixed verbs are directly or indirectly motivated by the image schema of circular movement, represented by the rectangle with dashed lines. Different sub-meanings reflect various modifications of the circular movement schema and modifications and extensions of the central meaning. The representation in Figure 1 is a matter of convention and is not intended to present absolute boundaries between the meanings. The meanings in the network reflect some differences in how the spatial prototype can be interpreted, and which of its aspects are in focus.

Illustrative examples of all the meanings are provided in Table 1. Some verbs belong to and can be found in more than one group in the table. Neither our table nor Figure 1 are intended to have absolute boundaries (although these are graphically suggested by the geometrical shapes in Figure 1, and rows and columns in Table 1): relative boundaries and overlapping categories are an important assumption of cognitive linguistic analyses. Each meaning along with its relation to neighboring or overlapping meanings is discussed in turn after Table 1.

Table 1: Meaning subgroups of *o(b)*-verbs

CIRCULAR MOVEMENT		
(1) MOVE AROUND (AN OBJECT)	(2) PASS BY	(3) TURN AROUND
<i>obići</i> 'visit; go around', <i>obletjeti</i> 'fly around', <i>obveslati</i> 'row around', <i>okročiti</i> 'straddle', <i>oploviti</i> 'sail around', <i>oprčati</i> 'run all over', <i>objahati</i> 'straddle', <i>obigrati</i> 'play / dance around', <i>okružiti</i> 'encircle'; <i>ogledati se</i> 'look all around' ²² (met.): <i>obigravati</i> 'hover over, importune' <i>obračunati (se)</i> 'settle accounts', <i>obratiti (se)</i> 'convert', <i>obrlatiti</i> 'coax', <i>omesti</i> 'hamper'	<i>obaći, obići</i> 'avoid', <i>opkoračiti</i> 'step over or around something' (met.): <i>obići (temu)</i> 'avoid (a topic)'; <i>ogovarati</i> 'slander', <i>oklevetati</i> 'slander'	<i>obazreti se</i> 'turn around', <i>osvrnuti se</i> 'turn around', <i>obrnuti (se)</i> 'turn around', <i>ogledati se</i> 'turn around' (met.) <i>obazreti se, osvrnuti se</i> 'address, reflect'

²² In this case, only the eyes and some body parts perform the movement. It is also possible for the body to turn around its own axis without changing its location.

(4) SURROUND		(5) COVER		(6) AFFECT A SURFACE	
<p><i>opkoliti</i> ‘surround’, <i>opsjesti</i> ‘bewitch’, <i>obzidati</i>, <i>ozidati</i> ‘wall around’, <i>ograditi</i> ‘enclose’, <i>obgrliti</i> ‘surround in a hug’; <i>okolčati</i> ‘stake around’, <i>omotati</i> ‘wrap around’; <i>obložiti</i> ‘coat’, <i>okovati</i> ‘shackle’, <i>oplakati</i> ‘splash (ashore)’; <i>obrezati</i> ‘cut around’, <i>opsjeći</i> ‘cut around’²³ (met.): <i>oplakati</i> ‘mourn’, <i>obasjati (se)</i> ‘lighten’, <i>obavijestiti</i> ‘inform’, <i>obučiti</i> ‘train’, <i>oduševiti (se)</i> ‘delight’, <i>obraditi</i> ‘re-do’, <i>omamiti</i> ‘stun’, <i>opljačkati</i> ‘rob’, <i>osunčati (se)</i> ‘sunbathe’, <i>ozloglasiti</i> ‘give notoriety’; <i>opaziti</i> ‘notice’</p>		<p><i>obasuti</i> ‘shower with’, <i>oblatiti</i> ‘cover in mud’, <i>oblijepiti</i> ‘cover in glue’, <i>ozidati</i> ‘cover in wall’, <i>obući (se)</i> ‘dress’, <i>obuti (se)</i> ‘put on shoes’, <i>okrečiti</i> ‘whitewash’, <i>oličiti</i> ‘paint’, <i>obložiti</i> ‘coat’, <i>opločiti</i> ‘pave’; <i>osuti (se)</i> ‘cover in; come to the surface’, <i>obradati</i> ‘cover in beard’, <i>obrasti</i> ‘overgrow’; <i>opskrbiti</i> ‘supply’, <i>oboružati</i> ‘arm’, <i>opremiti (se)</i> ‘equip’, <i>obdariti</i> ‘endow’ (met.): <i>obdariti</i> ‘reward’, <i>oblatiti</i> ‘smear one’s name’, <i>ogaditi (se)</i> ‘become or make repulsive’, <i>osigurati (se)</i> ‘assure’</p>		<p><i>obalaviti</i> ‘besmear’, <i>obasuti</i> ‘shower with’, <i>obojiti</i> ‘color’, <i>objeliti</i> ‘make white’, <i>oplaviti</i> ‘make blue’, <i>ovlažiti</i> ‘dampen’, <i>obasjati</i> ‘illuminate’, <i>osjeniti</i> ‘overshadow’; <i>obrisati</i> ‘wipe off’, <i>oklesati</i> ‘sculpt’, <i>olupiti</i> ‘peel’, <i>oribati</i> ‘scrub’, <i>osunetiti</i> ‘circumcise’, <i>obrijati</i> ‘shave off’, <i>očerupati</i> ‘pluck feathers’, <i>očupati</i> ‘pluck’; <i>opaliti</i> ‘sear’, <i>opržiti</i> ‘burn a little, sear, parch’; <i>ošamariti</i> ‘slap’, <i>opaliti</i> ‘punch’, <i>okinuti</i> ‘trigger’; <i>objesiti (se)</i> ‘hang’, <i>ovjesiti (se)</i> ‘hang’ (met.) <i>ocrniti</i> ‘decry’, <i>oblatiti</i> ‘smear one’s name’; <i>opaliti (po džepu)</i> ‘charge too much’</p>	
(7) IMPOSE/ACQUIRE A NEW FEATURE					
ACQUIRE			IMPOSE		
-je-	<p><i>olabavjeti</i> ‘become loose’, <i>opustjeti</i> ‘become desolate’, <i>otupjeti</i> ‘become numb’, <i>oživjeti</i> ‘become alive’, <i>ožutjeti</i> ‘become yellow’, <i>ostarjeti</i> ‘get old’, <i>oslijepjeti</i> ‘become blind’, <i>omršavjeti</i> ‘lose weight’</p>	-i-	<p><i>olabaviti</i> ‘make loose’, <i>opustošiti</i> ‘make desolate; pillage’, <i>otupiti</i> ‘make numb’, <i>oživiti</i> ‘animate’, <i>ožutiti</i> ‘make yellow’, <i>oslijepiti</i> ‘make blind’, <i>ozloglasiti</i> ‘give notoriety’</p>		
With refl. <i>se</i> -impose; without <i>se</i> -acquire		<p><i>ocijediti (se)</i> ‘drain’, <i>oduljiti (se)</i> ‘lengthen’, <i>okaljati (se)</i> ‘besmirch’, <i>osuditi (se)</i> ‘dare’, <i>osloboditi (se)</i> ‘free’, <i>osušiti (se)</i> ‘dry’, <i>opametiti (se)</i> ‘become smart’, <i>obnoviti (se)</i> ‘renew, renovate’</p>			
	<p><i>obamrijeti</i> ‘become numb’, <i>ojunačiti se</i> ‘toughen up’</p>		<p><i>onečistiti</i> ‘pollute’, <i>oskvrnuti</i> ‘desecrate’</p>		

²³ In cutting and biting events, circular movement (or part of it) is performed by an agent using an instrument or his body part.

The first three meanings in the first part of the table focus on keeping distance from the LM, whereas the remaining meanings (4)–(7) emphasize the opposite aspects of the prototype MOVE AROUND (AN OBJECT): a TR moving around an LM can enclose it, contact it, and affect its boundaries. The general image schema of circular movement allows for both these focuses and specifications.

We now look at the individual meanings in the meaning network and their relations. We provide typical sentence examples found in the corpora or on the internet for each meaning. The order and numeration of the categories follows Table 1.

(1) MOVE AROUND (AN OBJECT)²⁴

The central meaning of *o(b)*- MOVE AROUND (AN OBJECT) is presented in Figure 2. This meaning is spatial in nature. It directly or indirectly motivates all the other meanings of *o(b)*-verbs, be they concrete or metaphorical, and thus has a special status in the meaning network.

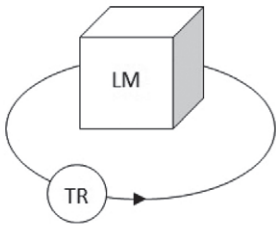


Figure 2: MOVE AROUND (AN OBJECT)

A mobile TR in this scenario spatially or metaphorically moves around a stable LM once or many times and/or from different directions. Its trajectory is ideally a full circle. This central, prototypical meaning can be observed in verbs that denote different manners of movement in space. This scenario can be illustrated by the self-motion verbs *obletjeti* ‘fly over and around’ and *optrčati* ‘run all around’ in (1):

(1a) Ruski avion nekoliko je puta *obletio* oko mete. (INT)

The Russian airplane flew around the target several times.

(b) Par puta ju je uhvatila huja pa je nekoliko puta *optrčala* cijelo prizemlje, uzduž i poprijeko. . . (INT)

At some points she would get angry, so she dashed around the entire ground floor several times.

(1a) illustrates a typical spatial scenario with a mobile TR (*ruski avion*) and most usually a stable LM (*meta*) expressed in the prepositional phrase (*oko mete* ‘around the target’), whereas (1b) shows another constellation; that is, constructions with

²⁴ In our context, "move around" should be understood in the meaning ‘perform a circular movement’.

self-motion verb and accusative objects (*cijelo prizemlje* ‘the entire ground floor’). We argue that in such constructions spatial locations are not understood in spatial terms only as mere locations, but resemble affected participants.²⁵ In other words, *obletjeti oko mete* and *obletjeti metu* imply different construals of the same event.

Motion verbs prefixed by *o(b)-* with the prototypical meaning of concrete circular movement in space are not numerous. Nonetheless, this spatial meaning is central because it provides motivation for semantic extensions observable in many verbs used in other spatial and non-spatial scenarios.

Only the most frequent motion verbs referring to the most common and general manners of motion combine with *o(b)-* (e.g., *trčati* ‘run’ → *optrčati* ‘run around’). *O(b)-* does not readily combine with motion verbs expressing specific and unusual manners of motion (e.g., *šepati* ‘limp’, *teturati* ‘hobble’, *klipsati* ‘stagger’, etc.), which can be linked to non-intentional nature of the movement these verbs refer to. We noticed an interesting case of a non-motion verb to which the prefix *ob-* adds the meaning of motion: *oblajavati* ‘yelp’ (see example (9b) in Section 4); however, we did not notice other verbs of animal sounds or other sound-emission verbs following this pattern.

O(b)- verbs in spatial contexts of circular movement are often found in constructions with the preposition *oko(lo)* ‘around’ (+ genitive; see 1a). *Okolo* is found in a prepositional role mainly in older examples;²⁶ in modern examples, *okolo* is almost exclusively used as an adverb.²⁷ The meaning of the prefix *o(b)-* and the preposition *oko* as observable in (2) is ‘around’. It applies to the spatial circular movement of a TR (an implied *on*) in relation to an LM (a spatial location, *grad* in (2a)). Whereas in (2b) an “ideal” circular movement is performed, a less ideal one is observable in (2a): circular paths can in reality deviate from the ideal form (e.g., they can be elliptical or rectangular). The important element in such settings is an image of a closed (geometrical) form, or perceived closing of the circle. The circle is not necessarily ideal, and it can be transformed into another geometrical form. Of importance is also the fact that some geometrical objects are topologically equivalent, and that a triangle, a square, or any polygon is homeomorphic²⁸ to a circle.

²⁵ Brala-Vukanović and Rubinić (2011) examine native speakers’ preferences related to choices of (in) direct objects versus prepositional phrases in constructions with prefixed verbs. They conclude that the spatial information (primarily Path) is lexicalized by prepositions, whereas the central component of the prefix is to express perfectivity of an action: “a) središnja semantička komponenta prijedloga odnosi se na put, odnosno elemente puta opisane kretanjem koje izražava glagol; b) prefiks semantički središnje opisuje svršenost radnje, uz koju vezujemo i elemente putanje (direktivnosti).” (Brala-Vukanović & Rubinić 2011: 33). The authors claim that the spatial information expressed by prefixes is weak, if not nonexistent, in such alternate constructions. However, as the authors themselves emphasize, much more research is needed in this field to reach definite conclusions. *Ob-* verbs such as *obletjeti* ‘fly around’ and *optrčati* were included in their study. Interestingly, the preference for the direct object construction was not noticed for *obletjeti* (*kuću / oko kuće*), but was clearly noticed for *optrčati* (*svijet / oko svijeta*). This indicates that the difference may relate to types of objects in constructions with prefixed verbs.

²⁶ E.g., *Mali "kanonik" zabrinuto obilažao okolo svoje kuće . . .* (HJR). ‘The little canon went around his house with worry’ Ante Kovačić, *U registraturi* (1888).

²⁷ http://hjp.novi-liber.hr/index.php?show=search_by_id&cid=eFpgWBM%3D&keyword=okolo+%28I%29.

²⁸ Two objects are homeomorphic if they can be deformed into each other by a continuous, invertible mapping (<http://mathworld.wolfram.com/Homeomorphic.html>).

With verbs describing motion around an axis, if they specify manners of motion characteristic of inanimate entities, as in (2b), the TRs do not necessarily control their motion. In (2c) with *ogleda se* ‘look around’, a person performs a circular movement with his head and possibly part of his body:

(2a) Tri je puta oprtrčao oko grada pokušavajući pobjeći. . . (INT)

He ran around the town three times trying to escape . . .

(b) Polica "360": okreće se oko svoje osi. (INT)

Shelf "360" rotates around its axis.

(c) Ogleda se oko sebe . . . (INT)

He looked around himself . . .

The verb *ogledati se* in (2c) is a transitional category: it does not indicate self-motion (locomotion), but motion of a body part (eyes). One of its meanings is ‘turn around’ (see 3 below).

(2) PASS BY (AVOID)

The meaning PASS BY is a metonymic extension of the prototypical meaning MOVE AROUND (AN OBJECT): it is metonymic because the full-circle trajectory is reduced to a semicircle, as shown in Figure 3. The trajectory can even be completely neutralized and transformed (almost) into a line, as shown in Figure 4. In this scenario, the TR bypasses the LM by leaving it outside its path. The focus is on the trajector's spatial lack of alignment with the LM and offsetting the LM outside the trajectory.

The PASS BY scenario implies an interruption of the intended TR's route: typically, the TR makes a semicircular movement and continues in the same or a different direction (see Figure 3), as illustrated by *obići* ‘go (all) around; avoid’, which denotes both concrete and metaphorical PASS BY when combined with concrete and abstract LMs, respectively. This motion type can also refer to a circular movement of a body part above a LM trying to avoid contact with it, as in *opkoračiti* ‘step over someone or something’.

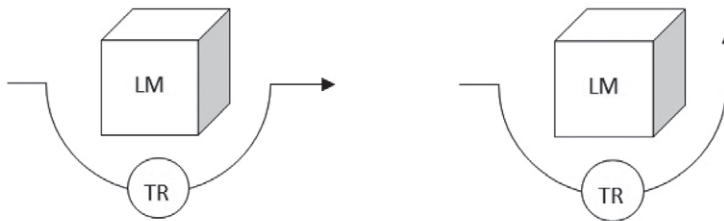


Figure 3: PASS BY (AVOID)

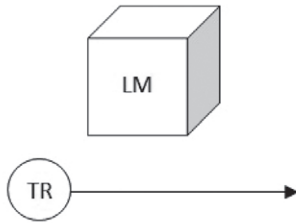


Figure 4: PASS BY (AVOID)

This spatial scenario is important in the network because it can motivate a few other sub-meanings, such as OVERTAKE, OUTDO, DECEIVE, MISTAKE, and OVERDO. For example, the idea of the TR abandoning its original route and taking a deviating path, and leaving the LM outside the trajectory implies "missing the target" in a certain sense. The meaning DECEIVE, grounded in this idea, can be observed in some Russian verbs prefixed with *o(b)-*, all denoting 'cheat, deceive, swindle' (see Endresen et al. forthcoming).²⁹ However, PASS BY does not seem to be productive in motivating these meanings in Croatian, as it is in some other Slavic languages.³⁰ The meaning OVERDO can be related to two verbs included in our database: *opiti se* 'drink too much; become drunk' and *oblokati se* (pejorative for a similar meaning); we also found two other verbs of consumption prefixed with *o(b)-* (*obžderati se*, *oždrati se* 'eat too much') in many internet examples in the meaning OVERDO.³¹ No other verbs of consumption (e.g., *jesti* 'eat') or other semantic subgroups follow the pattern in which adding *o(b)-* results in a verb meaning OVERDO in the contemporary language.³²

The meaning MISTAKE (take a deviating path) can be observed in two verbs in the database only: *omaknuti se* (e.g., *omaknula mu se primjedba* 'a remark slipped out of his mouth') and in *okliznuti se* 'slip, skid'. For this reason, we do not single out this meaning as separate in the network.

All the self-motion verbs expressing the prototypical meaning MOVE AROUND (AN OBJECT) could theoretically express PASS BY in appropriate contexts, but we most often found the verb *obići* 'go around' in contexts suggesting this meaning.³³

²⁹ Endresen et al. (forthcoming) consider *obmanut'* in Russian an umbrella verb in this category (although it is de-etymologized and synchronically morphologically opaque). The same meaning is expressed in Croatian *obmanuti*, but we could not detect the meaning DECEIVE in other *o(b)-* verbs and thus we do not attribute this meaning to *o(b)-* in Croatian.

³⁰ Baydimirova's analysis (2010) shows how this meaning in Russian motivates the meanings OVERTAKE, OUTDO, DECEIVE, MISTAKE, OVERDO, and METAPHORICAL PASS BY. Some of our verbs (especially in the category COVER) are semantically similar to what Baydimirova labels OVERDO: however, our verbs instead imply that something was done thoroughly, rather than overdone.

³¹ An interesting example is the jargon expression *ožderati se*. It can be found (e.g., in various internet sources) in the meaning 'drink too much' combining the prefix *o-* with the base verb *žderati*, meaning 'eat too much'.

³² Contrary to Croatian, this pattern is very productive with Russian *o(b)- -sja* verbs denoting basic human activities, as Endresen et al. (forthcoming) show. Croatian would choose *pre-* and *na-* to express similar meanings (e.g., *ob"est'sja – prejesti se*; *občitat'sja* 'read too much' – *načitati se*).

³³ That meaning is the basis for the nouns *obilaznica* 'bypass road' and *obilazak* 'bypass' derived from that verb, as well as for the verb *obilazati* 'bypass, detour'.

The following examples illustrate typical constructions in the PASS BY scenario:

(3a) Jedan dio ekipe . . . je u visokogorskom stilu obišao prepreku. . . (INT)

Part of the crew. . . has passed the obstacle in an alpine manner . . .

(b) Približio mu se polako i opkoračio³⁴ ga. (INT)

He slowly approached him and stepped over him.

Verbs indicating concrete PASS BY are not numerous and are closely related to the category MOVE AROUND, and so this meaning can be considered a contextual variation of the prototypical meaning MOVE AROUND (AN OBJECT). Such verbs indicate avoiding, but we do not consider AVOID to be a distinct meaning, but rather an implication of the semicircular movement: the TR establishes no contact with the object inside the circle or arc, and so it is necessarily avoided. Circular movement inherently implies avoiding some objects inside the circle or arc. Our knowledge of the world and the context reinforce the sense AVOID with typical obstacles and when one or another contextual factor indicates avoidance. We therefore consider that meaning context-dependent and do not attribute it to *o(b)*-.

The metaphorical variant of PASS BY can be observed in verbs that describe metaphorical deviations (from some positive behavioral patterns); for example, in verbs denoting ‘slander, defame’ by means of telling lies (e.g., *ogovarati*, *olajati*, *oklevetati*). However, these verbs more strongly suggest a metaphorical variant of surrounding (see 4, SURROUND/ENCLOSE) and thus illustrate overlapping of different meanings in the network.

(3) TURN AROUND

This meaning is also a metonymic variant of the prototype. TURN AROUND is a variant of circular movement, a metonymic reduction of the full circle to a semicircle, that is, it represents a PART FOR THE WHOLE metonymy. It implies that a TR makes a turn from its course (see Figure 5). It is realized in a few verbs only, specifically in verbs implying that only part of the human body moves. However, some spatial scenarios may include movement of the entire body, as with *okrenuti (se)* ‘turn around’. The verbs in this category imply, in addition to physical movement, metaphorical movement; that is, intention and intellectual activity, as in *obazreti se* (meaning ‘look back’, but also ‘ponder’, or ‘address’). TURN AROUND is also denoted by *osvrnuti se* ‘turn around, look back’ which also can refer to an intellectual activity. The metaphorical meanings of these verbs are based on the metaphor PHYSICAL VISION IS MENTAL VISION (see Sweetser 1990).

³⁴ Examples with *opkoračiti* and the prepositional phrases with *oko* can frequently be found on the internet.

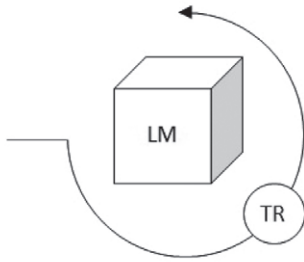


Figure 5: TURN AROUND

This meaning is illustrated by the constructions in (4). The spatial profile of the constructions with *okrenuti se* and *obazreti se* is emphasized by the co-occurrence of these verbs with the preposition *oko*:

(4a) Okrenuo se za 180 stupnjeva. (INT)

He turned 180 degrees.

(b) Okrenuo se oko svog čuvara te gađao drugi kut. (INT)

He turned around his guard and aimed at another angle.

(c) Obazreo se oko sebe i tek tada mu je sinulo u glavi da je sam. (INT)

He looked around himself and only then did he realize he was alone.

The prototype from which the rest of the categories emerge, *MOVE AROUND*, refers to a concrete circular spatial movement and simultaneously to the completion of such an action. Verbs such as *obveslati* ‘sail around something’ and *optrčati* ‘run around something’ refer to a full circular movement, taking place on all sides of an object and possibly in several turns. This meaning, as for all the others, has a metaphorical variant with verbs such as *obračunati* ‘calculate’ and *obračunati se* ‘deal with something or someone’. With *obračunati se*, the spatial circular movement is metaphorically mapped onto an action that is done extensively or systematically.

Submeanings (2) and (3) also relate to the idea of circular motion, be it an interrupted circular movement (e.g., semicircular), or a movement affecting an object in a circular way. Thus, *MOVE AROUND*, *PASS BY*, and *MAKE A TURN* all instantiate one broader category grounded in the general idea of a concrete spatial movement. All three are closely related to the idea of a circular movement, but the full circle can be reduced and even transformed into a straight line. In addition, the meanings of some verbs are more abstract than others.

Summing up the first three meanings, it is important to note that the central meaning of (an ideal and complete) circular movement experiences metonymic and metaphorical transformations. This happens in the spatial domain by emphasizing different aspects of the domain, and via extensions from the spatial to abstract domains when concrete spatial images are mapped onto abstract ones. The transformations of the circular movement schema are related to the reduction of the length of the circular path, illustrated in Figure 6: that length ranges from a

full circle and total encirclement to a semicircular arc-like movement whereby the radius of the arc can vary considerably.

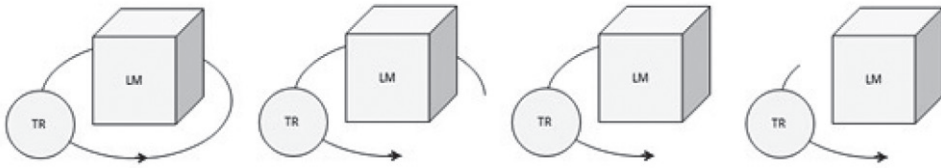


Figure 6: Variants / transformations of the circular movement schema

Circular movement can be concrete and metaphorical (both meanings coexist in some verbs; for instance, in the imperfective verb *obigravati* 'dance / go / run around; cater to sb; solicit; pester' it has a concrete meaning of physical motion ('go / run all around') and refers to an annoying attitude.

Some of the contexts we examined when looking for illustrative constructions of individual verbs suggested the meaning AFFECT MANY / A NUMBER OF OBJECTS; that is, affect "a circle" of objects. Many contexts with the verb *obići* suggest this meaning. However, this meaning in Croatian seems to be context-dependent with self-motion verbs, and cannot be attributed to the prefix. The situation is different in some other Slavic languages: in Russian, for example, adding *ob-* to a non-motion verb can result in a verb indicating "affect a circle of objects" (e.g., *obzvonit'* 'call a number of people', *oprosit'* 'interview a group of people'), and this meaning can thus be attributed to *ob-* in Russian (see Endresen et al. forthcoming). In Croatian, a similar situation is related to the verb *objaviti* 'announce to a large number of people; make public'. However, the object announced is war, news (LM) that encompasses a large number of human experiences (secondary LMs).³⁵

SURROUND / ENCLOSE, COVER, AFFECT A SURFACE

The central spatial meaning MOVE AROUND (AN OBJECT) directly motivates the meaning that we label SURROUND/ENCLOSE. This meaning is very important for two other meanings, COVER and AFFECT A SURFACE, because it introduces the idea of close contact of a TR with an LM; that contact can affect the LM's qualities. We show below that the meanings of SURROUND/ENCLOSE, COVER, and AFFECT A SURFACE are inseparable in many verbs.

(4) SURROUND / ENCLOSE

The verbs primarily indicating SURROUND/ENCLOSE refer to an action performed by a TR that causes an affected LM to be surrounded (see Figure 7a).

³⁵ We owe this remark to an anonymous reviewer.

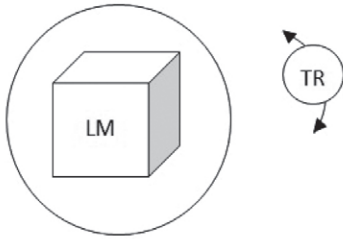


Figure 7a: SURROUND / ENCLOSE

When moving around an LM, a TR can enclose it, establishing contact and affecting its edges, boundaries, surface, or volume (by adding something to it or removing something). An object can be surrounded and enclosed spatially and metaphorically. When an activity surrounds, encloses, or envelops an object, metaphorical SURROUND/ENCLOSE is realized.

The scenario SURROUND/ENCLOSE can be illustrated with (5), in which surrounding is performed by the arms of an agentive TR:

- (5) . . . želiš cijelu Zemlju obgrliti ti nasmijani čovječe (INT)
 . . . you wish to hug the whole Earth, you smiling man. . .

In the scenario SURROUND/ENCLOSE, two foci are present with two subgroups of verbs: (a) the focus is on the outer spatial boundaries of a LM — a domain to which something can be attached or added. Alternatively, the focus is on (b) detaching or removing something from the surface. Both scenarios imply an impact.

The enclosure does not necessarily need to have a round shape. The notion of surrounding or enclosing is present in cases as *okolčati* ‘stake around’, which can refer to either encircling or putting a fence around a property, sometimes in the shape different from a circle (e.g., rectangular; see Figure 7b). This spatial setting relies on the metonymy CIRCLE FOR OTHER GEOMETRICAL OBJECTS and geometry: a circle and a square are homeomorphic to each other.

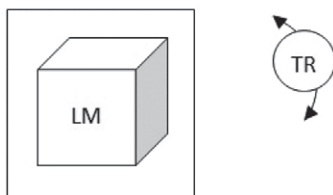


Figure 7b: SURROUND / ENCLOSE

The (a) scenario is realized with verbs such as *okružiti* 'encircle', *obgrliti* 'hug', *okolčati* 'stake around', *opkoliti* 'besiege, surround', *obaviti* 'wind around', *omotati* 'wrap', *ograditi* 'encircle with a fence/wall', *obzidati* 'encircle with a wall', *opšiti* 'edge, border around', and similar.

The (a) scenario can be illustrated with the following example in which a TR³⁶ performed an action (expressed by the creation verb *obzidati*)³⁷ of building a wall around the LM *garažno mjesto* in a circular manner. At the end of the action, the LM in (a) is surrounded by a narrow wall; that is, the wall is added to the original spatial setting.

(6a) . . . jedan suvlasnik je obzidao svoje garažno mjesto. (INT)

. . . one of the owners has put a wall around his parking space.

With simplex verbs that imply creation (e.g., *zidati* 'build (a wall)', *graditi* 'build'), the prefix adds the meaning of circular movement: as a result, the creation progresses circularly. This meaning is very closely related to motion verbs expressing the central meaning (e.g., *optrčati* 'run around'), the only difference being in the meaning of the base verbs: locomotion implying reaching different locations within a circle in MOVE AROUND versus creation/construction that follows a circular path in the meaning SURROUND/ENCLOSE.

The (b) scenario is observable with verbs such as *obrezati*, *opsjeći* 'cut off edges; cut around',³⁸ *oglodati* 'gnaw around', *opkopati* 'dig around', and so on; see (7).

(7) Oko žrtvenika je opkopao jarak . . . (INT)

He dug up a ditch around the altar . . .

³⁶ There are different views on TR / LM alignment in transitive constructions involving a complex constellation of participants; for instance, agentive or non-agentive subjects, and different types of objects, plus possibly spatial information and prefixed verbs. For Nessel (2010), sentences with transitive verbs contain two trajectors. The direct object is the trajector of the prefix, and the causer is the verb's trajector. Hampe (2002) uses the term "subtrajector" for the direct object. Belaj (2011) terms the causer the "agentive trajector" and the direct object the "trajector."

In scenarios with motion events, the TR is the entity that performs motion (concrete or abstract) whereas the landmark (LM) marks the entity that in some way "experiences" the results of that movement or that the movement is revolving around. The moving entity is not explicitly expressed; it can be contained within the verb. Occasionally, the TR and LM are not distinct objects. For example, in the sentence *Ogleda se oko sebe* the (sentence) TR is implicitly expressed in the verb (the third person singular, *on*), and the LM is *sebe*, the reflexive pronoun referring to the TR (*on*).

We use the term *trajector* (for agentive and non-agentive trajectors, causers, and sentence subjects). In sentences with direct objects, DOs are landmarks, as are entities expressed in (locational or directional) prepositional phrases describing spatial realms.

³⁷ *Obzidati* implies surrounding, but also covering. See HJP: *ograditi ili obložiti zidom*. http://hjp.novi-liber.hr/index.php?show=search_by_id&id=eFtkXBU%3D&keyword=obzidati. The verb *ozidati* also exists, and, according to HJP, it concentrates more on covering than surrounding (see HJP: http://hjp.novi-liber.hr/index.php?show=search_by_id&id=eFdgXBg%3D&keyword=ozidati *neku površinu obložiti zidom ili čime sličnim u tehničarima zidanja iznutra ili izvana [ozidati bunar]*). A closer examination of a sufficient number of examples is needed to arrive at conclusions about possible meaning differences between these two verbs.

³⁸ Similar verbs clearly imply circular movement (and thus surrounding) in addition to indicating removal. In the meaning "affect a surface," we also find verbs indicating removal; however, the notion of circular movement is much less present in these verbs.

Surrounding can imply a path in the form of a closed geometrical form, but the path is not necessarily circular: for instance, *okolčati* implies putting sticks around a field, land, and so on to mark the border; however, the field does not have to be circular (see Figure 7b).

The meaning of SURROUND/ENCLOSE has a metaphorical variant in which the spatial domain is mapped onto the domain of human activities. The impact on an object is conceptualized in terms of spatial enclosure with verbs such as *oduševiti* 'delight', *očarati*, *opčiniti* 'fascinate, captivate', *opisati* 'describe', *objasniti* 'explain', *obučiti* 'train', *ocijenti* 'evaluate', and *olajati*, *oblajati*, *oklevetati* 'defame, slander'. The last three verbs can also be interpreted as metaphorical instances of PASS BY (see Section 2). Verbs in this group that are associated with adjectival and nominal bases (e.g., *objasniti* < *jasan*) link the metaphorical SURROUND / ENCLOSE group with the factitive meaning of IMPOSE / ACQUIRE A NEW FEATURE.

In the metaphorical variant of surrounding/enclosing, a TR causes an LM to be surrounded by its action. In (8), the TR with his verbal activity metaphorically surrounds and envelops the LM:

(8) Premijerka je oklevetala Stankovića. . . (INT)

The Prime Minister slandered Stanković . . .

Interesting examples in this context are the verbs *olajati* and *oblajati* 'slander, libel' (synonyms according to HJP). HJP indicates only metaphorical usages of *oblajati* / *olajati*³⁹ and *oblajavati*, illustrated with (9a), but we found concrete spatial usages as well (see 9b), in which the verb *oblajavati* denotes a dog's simultaneous circular movement in space (running around an object) along with its barking:

(9a) . . . klika oko pokojnog predsjednika ružno ga je "oblajavala" . . . (INT)

. . . people around the late president were denigrating him.

(b) Našla svinju za 30 sekundi, oblajavala 8 minuta i stala, došla do mene. (INT)

She found the pig within 30 seconds, barked for eight minutes, stopped, and approached me.

The verb denotes MOVE AROUND and SURROUND / ENCLOSE (the pig is surrounded by barking) at the same time, and thus illustrates a close relation of these meanings.

Verbs in this group are frequently doubly motivated by both the verbal base and an adjectival or nominal base (e.g., *okružiti* 'surround' (*krug* and *kružiti*), *ograničiti* 'limit' (*granica* and *graničiti*): in these cases, the spatial meaning of the prefix SURROUND/ENCLOSE is still obvious, and so these verbs simultaneously bear the spatial meaning of SURROUND/ENCLOSE and the factitive meaning of IMPOSE A NEW FEATURE.

Some spatial scenarios of SURROUND / ENCLOSE indicate enveloping; that is, they emphasize a three-dimensional impact of a TR on an entire body. This again illustrates fuzzy borders between the meanings. As to enveloping, we believe that

³⁹ http://hjp.novi-liber.hr/index.php?show=search_by_id&id=eFpuXhk%3D&keyword=olajati.

in Croatian the general meanings of SURROUND/ENCLOSE and COVER (see 5) can easily encompass "verbs of enveloping" (which are treated in some analyses as a separate category, see Endresen et al. (forthcoming) on Russian). These verbs imply that something is surrounded from all sides or that all sides of an object are covered (e.g., *obrasti* 'grow all over', *obljepiti* 'glue all over'). We do not see reasons good enough to consider ENVELOP as a distinct meaning because that meaning relates to the fact that some objects are three-dimensional or conceptualized as such, and have more than one surface that can be covered.

The perception verb *opaziti* 'see, notice, realize' is a peripheral member of this group because it shows a much weaker relation to the concept SURROUND/ENCLOSE. This verb meaning refers to "enclosing" an object in the TR's vision field in an unintentional act of perception. Simultaneously with modifying the meaning of the base verb *paziti*, the prefix perfectivizes it.

Before proceeding to the next category, COVER, we should indicate that some verbs of surrounding/enclosing also indicate covering. The border between SURROUND/ENCLOSE and COVER is very often fuzzy and is between COVER and AFFECT A SURFACE. For instance, verbs such as *omastiti* 'grease' imply the notion of covering but also inflicting something on the surface of an object.

(5) COVER⁴⁰

This meaning implies that a TR will be covered (or enveloped) by a LM at the end point of an action, or that a TR envelops an LM with a material or substance, or is only partially covered (see Figure 8). The LM or its surface is covered through a TR's impact or by an external force.

This scenario can be illustrated with the verbs *obući (se)* 'put clothes on', *obuti (se)* 'put shoes on', and so on. Some verbs imply that the original appearance of a surface is changed (e.g., *opločiti* 'cover in tiles').

Depending on the type of object covered, covering (enveloping) can be slightly different: with *obuti*, all of the planes of a three-dimensional object (a foot) are (totally or partly) covered; that is, affected from all sides.



Figure 8: COVER (partially or completely)

⁴⁰ The dictionary definitions of many verbs in this group explicitly include 'cover' (*pokriti se*).

With *opločiti* and *okrečiti*, a surface is affected; that is, covered by an object or substance (see 10). We conceptualize walls and ceilings as surfaces, and so scenarios that would include their "enveloping" are not viable.

(10a) Ne trebaš biti majstor da bi dobro okrečio zidove!

You don't need to be a handyman to properly whitewash your walls!

(b) Napravio sam tri prozora i daskama opločio strop. (INT)

I've done three windows and have covered the ceiling in boards.

Opločiti, is, however, different from *okrečiti* in the sense that *opločiti* has a near-synonym in *popločiti* (*popločati*) applying to similar spatial scenarios, whereas *okrečiti* does not have such a near-synonym.⁴¹ An examination of the internet and HJR examples with *opločiti* and *popločiti* did not reveal significant differences in their spatial scenarios, at least not in the types of LMs affected: these are most often surfaces (e.g., floors, paths, squares, and walls) with both verbs. We relate differences in construals with *popločiti* and *opločiti* to a blend of the surface-contact meaning and distributive meaning of *po-* in *popločiti*, which focuses on secondary landmarks (e.g., tiles) that cover different points along a surface (e.g., a floor), whereas *opločiti* focuses on covering (and secondarily on circular movement(s) involved in performing the action). Both verbs also carry the meaning of resultativity, which is metaphorically extended from their spatial meanings.

An extended meaning of covering is also observable in *obdariti* 'endow' and *oboružati* 'arm'.⁴² A few other verbs in addition to these (e.g., *opskrbiti* 'supply') seem to indicate a separate meaning (EQUIP), but we do not consider it to be a distinct meaning because the base verbs themselves imply equipping. Verbs such as *obdariti*⁴³ 'endow' imply "give," and for that reason also denote imposing a new quality (see Section 7).

This meaning also has a metaphorical variant with verbs such as *ocrniti*, *oblatiti* 'besmirch'.

The categories SURROUND/ENCLOSE and COVER occasionally have fuzzy borders and quite a few verbs bear both meanings (e.g., *okaljati* (*se*) 'besmirch (oneself)', *oviti* (*se*) 'wrap (oneself) around something', *osapunati* (*se*) 'soap (oneself) thoroughly').⁴⁴ Metaphorical COVER and metaphorical SURROUND / ENCLOSE also

⁴¹ A Google search of September 23rd, 2015 indicates that *popločiti* / *popločati* are much more frequent than *opločiti*.

⁴² *Oružati* is attested in HJR, although it is infrequent. A few attestations of the base verb *dariti* were found in older literature. An interesting issue that has to be left to future research is the semantic relation of the prefixes *ob-* and *na-* in verbs and *oboružati*.

⁴³ We noticed that *obdariti* occurs in very specific contexts, whereby *majka* (*priroda*) is among the most frequent TRs, and in contexts with exceptional, mostly abstract, gifts.

⁴⁴ *Osapunati* has a much more frequent near-synonym in *nasapunati*. A few examples with *osapunati* were found on the internet and in HJP, and numerous ones with *nasapunati*. The examples examined indicate that *nasapunati* focuses on applying soap onto the surfaces of various objects (e.g., body parts, stairs, etc.), a scenario that illustrates the prototypical, central meaning of the prefix *na-*, whereas *osapunati* focuses on applying soap onto an object as a whole, onto all its sides. The circular movement involved in applying soap is an important element in the spatial setting of *osapunati*.

overlap and blend (e.g., in *oklevetati*). Furthermore, COVER blends with AFFECT A SURFACE in many verbs. Such overlaps and transitional verbs are important in our model because they illustrate the fuzzy borders between meanings that we treat as "separate" for practical analytical purposes.

We found it difficult if not impossible to consider SURROUND / ENCLOSE and COVER as discrete senses in many spatial contexts of our verbs. Separating these senses is even more difficult in abstract contexts. This is why surrounding and covering can be considered one larger category that also includes enveloping.

(6) AFFECT A SURFACE

For this meaning⁴⁵ to be realized, it is crucial that the LM be a surface to which some substance is attached or removed from. The LM in its entirety is not necessarily a surface, but surfaces are a prominent aspect in this scenario. As with the category SURROUND / ENCLOSE already discussed, verbs referring to affecting a surface can imply either attachment, applying of some substance to the surface, or removal of some substance from the surface (e.g., *omastiti* 'grease' versus *obrisati* 'wipe off', *obrijati (se)* 'shave off'); the base contributes the direction of activity rather than the prefix.

In scenarios with verbs expressing this meaning, the LM's surface is affected by an outside force or an agentive TR. This meaning very often blends with COVER as well as SURROUND / ENCLOSE: a consequence of covering and surrounding can be affecting a surface (or these actions may happen simultaneously). When an LM is covered with a certain substance, the surface of the LM is necessarily affected. The LM being affected can experience a permanent change when it changes its appearance, as with *oplaviti*⁴⁶ 'color blue', *obrisati* 'wipe',⁴⁷ *oklesati* 'carve', *ofucati* 'become worn out', *ošišati*⁴⁸ 'cut (one's hair)', and so on.

⁴⁵ The meaning AFFECT A SURFACE (see Figure 8) is related to the definition of *o(b)-* found in HJP, 'do on a surface'.

⁴⁶ *Oplaviti* has a more frequent near-synonym in *zaplaviti*. Both verbs imply 'color blue' (*zaplaviti se* means 'become blue; start emanating a blue color'). The prefix *za-* in *zaplaviti* bears a spatial meaning of covering: a TR covers an LM, and the consequence is that the LM is "hidden" and inaccessible. The notion of being hidden and inaccessible in addition to being covered is foregrounded in all the *za-*verbs the bases of which denote colors (e.g., *zazeleniti*, *zacrniti*). In construals with *oplaviti*, *ozeleniti*, *ocrniti* (the last verb mostly occurs in metaphorical meanings), the notion of being hidden and inaccessible is not important. In addition to expressing AFFECT A SURFACE and COVER (e.g., *ozeleniti* is often found in the meaning 'cover with green plants'), these verbs are also linked to the central spatial meaning of *o(b)-* MOVE AROUND and the meaning SURROUND. Interestingly, *ozeleniti*, *zazeleniti*, and other verbs whose base denotes color have further near-synonyms in verbs with *u-*: in most cases, *u-* verbs are used in the meaning 'wear too much of a color' (e.g., *uzeleniti* 'wear too much green'). *U-* verbs are motivated by the container schema: the person wearing green clothes is "in a green container." A detailed examination of similarities and differences between similar verbs is beyond the scope of this paper.

⁴⁷ *Pobrisati* is similar in meaning: it foregrounds both the surface-contact meaning and the distributive meaning (a TR reaches different points along a surface while performing the action), both of which are implied by *po-*.

⁴⁸ The similar verb *podšišati* means 'cut around ears and on the neck; cut a little', whereas *pošišati* implies 'cut a little; cut a number of objects' in addition to primarily expressing a resultative meaning in some of the examples from HJR and the internet.

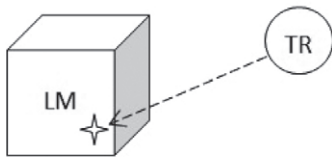


Figure 9: AFFECT A SURFACE

The LM experiences a temporary change on its surface through a forceful action with, for instance, *ošamariti* ‘slap’, and *opaliti* ‘hit’, usually caused by the TR. The process could also imply the removal of a part from the surface of the LM.

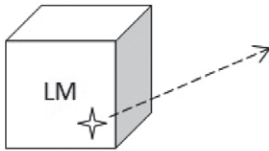


Figure 10: AFFECT A SURFACE (removal)

For the meaning of AFFECT A SURFACE, the idea of close contact of a TR with an LM that can affect the LM’s qualities is important; the same idea is also crucial for SURROUND / ENCLOSE AND COVER.

Verbs of applying colors to a surface (illustrated in 11) carry this meaning. However, at the same time these verbs denote ‘make’, and thus IMPOSE A NEW FEATURE.

(11a) ... šarao kemijskom olovkom po unutrašnjosti oveće sobe, dok je cijelu nije oplavio. (INT)

... He was scribbling over the interior of a large room until he entirely covered it in blue.

(b) ... pamtim doček Nove kad si me od batina oplavila. (INT)

... I remember the New Year’s Eve when you covered me in blue with your hits.

Some verbs in this group have a verbal base (e.g., *šišati* ‘cut (hair)’ → *ošišati* ‘cut (hair)’), some others are motivated with a noun or adjective instead (*obnažiti* ‘make naked’ – *nag* ‘naked’), and there are cases with double motivations (*obijeliti* ‘make white’ – *bijeliti* ‘whiten’, *bijel* ‘white’). In all of these verbs, *o(b)-* expresses the meaning AFFECT A SURFACE. With verbs motivated with a noun or an adjective, as well as with intermediate cases with double derivational motivation, the prefix denotes both the meaning AFFECT A SURFACE and factitive meaning IMPOSE A NEW FEATURE.

All the verbs of coloring that can be put into this category illustrate how several meanings of *o(b)*- blend: AFFECT A SURFACE obviously blends with COVER and IMPOSE A NEW FEATURE (e.g., with *omastiti* ‘grease’, *obijeliti* ‘make white’, *ozeleniti* ‘make green’).

The de-etymologized verb *òkrznuti* ‘touch a little, damage a little’⁴⁹ is a typical example of an entire subgroup of verbs that imply quantification; part of their definition is ‘slightly’, ‘a little’. This group denotes AFFECT SLIGHTLY and/or even DO SUPERFICIALLY: for instance, *očešati* ‘scrape, scratch slightly’ and *opaliti* ‘burn slightly’,⁵⁰ *okrasti* (koga) ‘steal a small quantity’: *okrasti* can be put in a clear opposition to *ukrasti* ‘steal’, indicating completion, and *pokrasti* ‘steal a large quantity’. The prefix indicates a short duration in some verbs (e.g., *osmuditi*, *oprljiti* ‘scorch’).

A specific subgroup of verbs that we relate to the meaning of AFFECT A SURFACE illustrates an interesting morphological and semantic relation and conceptual and semantic overlap between the prefixes *o(b)*- and *o(d)*-. As shown in several analyses of Slavic (e.g., Janda 1986; Šarić & Tchizmarova 2013), *od*- typically relates to removal and separation. However, we argue here that in its sub-scenarios relating to AFFECT A SURFACE (and SURROUND / ENCLOSE) *o(b)*- also implies removal of some substance, or of some parts, from a broader surface (e.g., with verbs such as *očerupati* ‘pluck, strip’ and *obrijati* ‘shave off’). This implies a complex and intriguing relation of *o(b)*- and *od*- that can be illustrated by prefixed verbs derived from base verbs that themselves imply removal: for instance, *odlomiti* ‘break off’ (prefixed with *od*-) and *oljuštiti* ‘peel’ (prefixed with *o*-).⁵¹ There is a difference in construals with these two verbs: the construal with *od*- focuses on removal and separation as such, on an object “leaving” and “departing” from its original location (or of one part “leaving” its original whole). *O*- relates to affecting a surface in many verbs: in some cases this means removal of some parts of the affected surface; this is the case with *oljuštiti* (*se*); compare (12a).⁵² Although the verb implies removal, the construal focuses more on the surface and different parts of it being affected. Removing individual small parts is additionally indirectly related to a circular movement and circular forms of affected objects. However, we can claim that *ljuštiti* can choose *od*- as well, and it indeed does: HJP also lists *odljuštiti*, and defines it as ‘remove skin by peeling’;⁵³ *odljuštiti* can also be found in many examples on the internet, although far less frequently than *oljuštiti*.⁵⁴ Although HJP does not give *odljuštiti* with the reflexive marker *se* (implying an inner process, or a result of the impact of a non-identified force), such usages are attested on the internet; compare (12b):

⁴⁹ http://hjp.novi-liber.hr/index.php?show=search_by_id&id=eFphXRc%3D&keyword=okrznuti.

⁵⁰ This meaning is mostly realized in contexts with sources of heat other than fire as indirect effectors (e.g., the Sun). We owe this remark to an anonymous reviewer.

⁵¹ See HJP: http://hjp.novi-liber.hr/index.php?show=search_by_id&id=eFlmWRE%3D&keyword=olju%C5%A1titi.

⁵² HJP: (što) skinuti ljusku s ploda; (koga) *iron.* naplatiti visoku cijenu i sl.; (*se*) izgubiti površinski sloj, oguliti se po površini (bez mehaničkog djelovanja izvana).

⁵³ Ljušteći skinuti koru [*odljuštiti naranču*], see HJP: http://hjp.novi-liber.hr/index.php?show=search_by_id&id=eFthWhg%3D&keyword=odlju%C5%A1titi.

⁵⁴ A Google search revealed around 480 examples with the infinitive *odljuštiti* and 114,000 with the infinitive *oljuštiti* (June 18th, 2015).

(12a) . . . cijela kora na granama smrzla i oljuštila se.

All of the bark on the branches froze and peeled off.

(b) Jedan uzrok je krvarenje iz mjesta sa kojeg se posteljica odljuštila iz maternice. (INT)

One of the causes is bleeding from the area where the placenta peeled off of the uterus.

O(b)- and *od-* express a similar image in some scenarios and parts of their semantic networks indeed overlap. In our approach to the semantics of prefixes, this is expected and logical.⁵⁵

Removal is a meaning component also present in some verbs that we primarily link to SURROUND/ENCLOSE (e.g., *obrezati* ‘cut around’, see 4): in the act of surrounding in which circular movement is fore-grounded, the edges of an LM can be affected and the LM may lose some of its (outer) parts. In the AFFECT A SURFACE scenario implying removal (e.g., *oljuštiti* ‘peel off’, circular movement is back-grounded (if present at all), and the emphasis is placed on a TR’s impact on the surface and completion of an action. In both scenarios, SURROUND/ENCLOSE and AFFECT A SURFACE, the base verbs already imply removal, which can contribute to an illusion of the prefix’s emptiness.

A few verbs in our database (e.g., *objesiti*, *okačiti*, *okvačiti* ‘hang’) that we link to the notion of AFFECT A SURFACE certainly represent peripheral members of this meaning sub-category. These verbs refer to a change of location. In spatial settings, these verbs are frequently used with the preposition *o*. The following examples illustrate the usage of these verbs with the preposition *o*, followed by accusatives (13a and 13b) and locatives (locative constructions, such as (13c) are far less frequent): Constructions such as (13d) are often interpreted as idiomatic (see Bralavukanović 2011).

(13a) . . . krletku [je] objesio o kuku na loži . . . (INT)

. . . he hung the cage on a hook on the balcony . . .

(b) On se svojedobno rukama ovjesio o prečku nogometnog gola. (INT)

He once hung with arms against the crossbar.

(c) . . . vrećica koja se nosi obješena o ramenu (INT)

. . . bag worn hung on your shoulder.

(d) Naime, da je pobijedio Kličko, bi odmah rukavice objesio o klin. (INT)

Namely, if Klitschko had won, he would have hung up his gloves.

⁵⁵ How complex the relation of *o(b)-* and *od-* can be is shown by the example of verbs with a slightly different form and identical meaning, according to HJP. This source defines *oduprijeti (se)* as ‘lean onto; resist’ and *oprijeti se* (cross-referenced to *opirati se*) as ‘lean on; resist’. However, HJP relates the first verb to the prefix *od-*, and second to the prefix *o(b)-*. These are obviously variants of the same verb, and should be related to the same prefix. See HJP: http://hjp.novi-liber.hr/index.php?show=search_by_id&cid=eFpmXxc%3D&keyword=oduprijeti+se. Etymological remark: *od-* (*ot-*) + *vuprijeti*. *Opirati se*: Etymological remark: *o(b)-* + *v.prati: udarati* http://hjp.novi-liber.hr/index.php?show=search_by_id&cid=eFljWBI%3D&keyword=opirati+se.

Circularity is certainly a weak notion in (13): Brala-Vukanović (2011) argues that force dynamics is the central element related to the preposition *o*, whereas circularity is the central element of *oko*. However, some traces of the image schema of circular movement are still present in (13): part of the hanging object (e.g., *krletka* in (13a)) "encloses" the supporting object (LM, *kuka* in (13a)). Furthermore, an important element present in the circular movement schema and in the scenarios above is contact.

(7) IMPOSE / ACQUIRE A NEW FEATURE

All of the categories discussed so far have a clear spatial profile, but also metaphorical variants. Similarly, IMPOSE / ACQUIRE A NEW FEATURE (see Figure 9) can be concrete, as in *obnažiti* 'make naked', or abstract, as in *osmjeliti (se)* 'become courageous'. Thus, the concept of affecting applies to both the spatial and abstract domains.

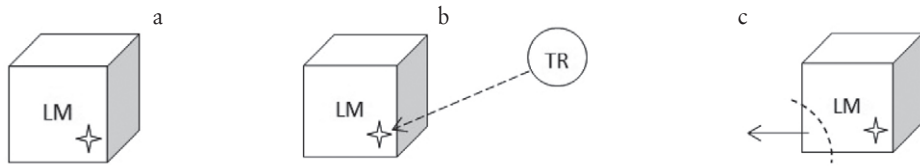


Figure 11: IMPOSE / ACQUIRE A NEW FEATURE

In this scenario, an entity gains another feature (with force (b) or without force (a)), occasionally followed by a loss of another feature (c). This meaning is expressed in many verbs with double (verbal and nominal) motivation, as well as in verbs that have only a non-verbal simplex base.

A few subgroups of verbs in this meaning express 'make' (*ozeleniti* 'make / color green'), 'become' (*oživjeti* 'become alive'), 'give' (*okriviti* 'blame'; i.e., 'give guilt'), and 'get' (*opernatiti* 'get feathers').

These are:

- a) De-adjectival factitive verbs implying MAKE X be Y (e.g., *obnoviti* 'renew', *ogoliti* 'denude')

(14) *Agrokor sa 170 vozila obnovio vozni park.* (INT)

Agrokor has renewed its fleet with 170 new vehicles.

- b) De-adjectival and denominal inchoative verbs implying BECOME X (e.g., *ostariti* 'grow old', *onemoćati* 'become feeble', *obistiniti se* 'come true')

(15) *Očekivao je da će onemoćati od plača. . .* (INT)

He expected to become feeble from crying. . .

- c) Denominal and de-adjectival factitive verbs implying GIVE X (*ocijenti* ‘assign value, evaluate’, *okriviti* ‘accuse’; i.e., ‘give guilt’)

(16) Porečki gradonačelnik razbio službeni auto pa okrivio srnu. (INT)

The mayor of Poreč has crashed the company car and blamed it on a deer.

- d) Denominal inchoative verbs implying GET X (*opernatiti* ‘get feathers’, *opametiti se* ‘come to one’s senses’)

(17) Valjda će se ljudi u Savezu konačno opametiti . . . (INT)

Hopefully, the people in the Union will finally come to their senses. . .

This meaning is attested with numerous *o(b)*-verbs in our database. The verbs in this meaning are derived from adjectives and nouns by circumfixation (e.g., *zelen* ‘green’, *živ* ‘alive’, *istina* ‘truth’, *zakon* ‘law’ → *ozeleniti* ‘become green’, *oživjeti* ‘become alive’, *obistiniti* ‘come true’, *ozakoniti* ‘legalize’). Some are derived from simplex base verbs that are themselves derived from adjectives or nouns (e.g., *pero* ‘feather’, *pernat* ‘feathery’ → *pernatiti*, *opernatiti* ‘become covered in feathers’; *pust* ‘desolate’, *pustoš* ‘desolation’ – *pustošiti*, *opustošiti* ‘devastate’).

In some verbs, the prefix *o(b)*- occurs with the prefix *bez-* resulting in the meaning ‘make / become without’ (*obezličiti*, *obezglaviti (se)*). Some manuals (e.g., HJP) treat *obez-* in such verbs as a single prefix;⁵⁶ however, we see no reason for this because similar verbs clearly relate to adjectives prefixed by *bez-* (*bezličan* ‘faceless’, *bezglav* ‘headless’) and / or prepositional phrases with the preposition *bez* ‘without’ (*bez lica*, *bez glave*). *O-* in similar verbs contributes its standard meaning, ‘make / become’, whereas the second prefix *bez-* contributes the meaning ‘without’.

IMPOSE / ACQUIRE implies the LM’s acquisition of some feature imposed by a TR, sometimes followed by the loss of another. The change is in focus. In some cases, whether the verbs denote IMPOSE or ACQUIRE can be deduced from the use of the reflexive *se*. The verb *ohladiti* ‘cool down’ implies an action by (usually) a non-agentive TR or an outside force that causes an LM to cool down, whereas *ohladiti se* ‘get cold’ implies a result that happened "by itself" with time causing the change (see 18):

(18a) Kraća je stanka malo ohladila Čilića. . .(HJR)

A short break cooled Čilić down a bit. . .

(b) Bura je ohladila vodu. . .(HJR)

The north wind cooled down the water. . .

(c) Kazao mi je da se noga ohladila i da ga boli. (HJR)

He told me his leg cooled down and hurt.

⁵⁶ See HJP: *obezglaviti*: http://hjp.novi-liber.hr/index.php?show=search_by_id&id=eFhWhE%3D&keyword=obezglaviti.

IMPOSE A NEW FEATURE is expressed by verbs in which a TR causes changes in an LM, whereas ACQUIRE A NEW FEATURE (see (c) above) instead refers to changes in entities without any external causer present. That difference is reflected in construction types in which these verbs normally occur: transitive (18a) and (b), and intransitive (18c).

Another derivational unit also distinguishes the meanings of IMPOSE and ACQUIRE: the suffix *-i-* (implying IMPOSE) as opposed to *-je-* (implying ACQUIRE). For instance, these suffixes distinguish the verbs *otupliti* 'to blunt something' and *otupljeti* 'to become numb or dull'.

A subgroup of about ten *o-*verbs in our database bears the meaning 'bring forth a . . .' (e.g., *o janjiti se* 'bring forth a lamb'). *O-*is systematically added to nominal bases that refer to young animals (e.g., *janje* 'lamb' – *o janjiti (se)*).

In this subgroup, many base verbs relate to colors. Adding *o-* to a base verb denoting 'become / apply a color' is a regular and very productive pattern (e.g., *o-bijeliti* 'become white';⁵⁷ *o-bijeljati* 'make white'). As mentioned, similar verbs also bear the meaning of AFFECT A SURFACE.

Some of the verbs refer to visible changes (e.g., *onečistiti* 'make dirty' in its concrete meaning); that is, changes in some physical features of objects. New features are visible in these cases. With some other verbs, changes are non-spatial (e.g., *očovječiti* 'make human')⁵⁸ taking place in a non-physical domain. Entities acquire new features when they gain a characteristic that was not there before and the action was not imposed by an outside force, as in *očovječiti se* 'humanize', *odrvenjeti* 'lignify', *ojačati* 'strengthen up', and so on.

Going back now to the prototype, circular movement in space, it is seen that the notion of movement is very abstract in the meaning of IMPOSE / ACQUIRE A NEW FEATURE, which is not directly related to the prototype. The relation to circular movement is indirect, realized in an image of state change that resembles an object "encircled" by a new feature. However, even if not obviously related to the prototype, IMPOSE / ACQUIRE A NEW FEATURE is closely related to a few other meanings in the network. The factitive and inchoative verbs in this group include those with concrete spatial meanings such as *ogoliti* 'bare', and *opernatiti se* 'become covered with feathers', which clearly represent the prefix meanings SURROUND / ENCLOSE, COVER, and AFFECT A SURFACE, already discussed. However, the factitive and inchoative verbs also contain units that refer to changes in physical and psychological states, such as *opiti* 'make drunk, intoxicated', *ogljupjeti* 'become stupid', and *otvrdnuti* 'become hard': these verbs provide a conceptual link to the meaning metaphorical SURROUND / ENCLOSE. In other words, the factitive / inchoative meaning IMPOSE / ACQUIRE A NEW FEATURE is conceptually motivated by both spatial and metaphorical meanings of *o(b)-* and is thus well-incorporated into the semantic network.

⁵⁷ The verb with the prefix *po-* (*pobijeliti*) is more frequent in Croatian in the meaning ACQUIRE. This generally applies to verbs with adjectival bases denoting colors.

⁵⁸ Examples show that some *o-* verbs have antonyms in *raz-* verbs implying "deprive of"; for example, *Čovjeka je lako rasčovječiti, ali ga je teško očovječiti.* (INT) 'It is more difficult to humanize than dehumanize someone'.

4. CONCLUDING REMARKS

In this analysis, our chief aim was to work out the semantic network of the verbal prefix *o(b)-*. We used an extensive database of some six hundred prefixed *o(b)-* verbs culled from various sources and analyzed all the verbs in the database. When establishing the meaning network and explaining paths of meaning extensions and showing the meaning relations that hold the network together, we attempted to isolate the meaning of *o(b)-* from the meaning of the bases it combines with, although this was often difficult. Unlike previous research on *o(b)-* in Slavic, we aimed at limiting the number of meanings because we noticed that a few sub-meanings would be context-dependent in Croatian. We approached *o-* and *ob-* (*oba-*, *op-*) as the same prefix (see Section 1.2). We are aware of the fact that this is a controversial issue, not only in Croatian, but in research on Slavic in general.⁵⁹ Our research has shown that both *o-* and *ob-*, in addition to having the same etymology, carry the same meaning and occur in all our meaning sub-categories. This is the main reason for our decision to treat them as a single prefix.

We identified a few verb pairs in our database that combine with both *o-* and *ob-* (e.g., *olizati* – *oblizati* ‘lick (all) around’), which leads to the assumption that these forms have developed some meaning differences. Our approach to synonymy relies on the assumption that non-equivalence in form must relate to (at least some) non-equivalence in meaning. We have checked some examples, and observed that there is an insignificant meaning difference in some similar cases, whereas some examples indicate more significant differences.⁶⁰ However, in order to draw any reliable conclusions in this respect, an identification and examination of all cases of variation, and corpus-based research on these verb pairs, is needed in future research.

Our analysis has demonstrated that the different meanings in the meaning network of *o(b)-* are closely interrelated by either metaphorical or metonymic extensions of the prototypical meaning of circular movement, MOVE AROUND (AN OBJECT). That central spatial meaning is attested with a relatively small number of self-motion verbs. Some motion verbs or verbs used in spatial scenarios imply an entire circle, whereas some other verbs imply part of a circle only. All of the other concrete and metaphorical meanings relate to this central meaning directly or indirectly.

Many verbs in our database are polysemous and express different meanings at the same time, or activate different meanings in specific contexts. In addition to polysemy, we were constantly aware of the fuzzy borders between meanings

⁵⁹ See Janda et al. (2013).

⁶⁰ *Kuja će olizati psiće, a zatim oblizati svoje zube.* <http://www.vauvau.net/sve-o-psima-mainmenu/o-psima-sve-o-psima-49/1656-kako-psi-koriste-svoja-osjetila>. In this example, *olizati* refers to an outer LM and *oblizati* refers to an LM that is part of the TR (*svoji zubi*). Despite this, both verbs could be interpreted as “clean thoroughly and from all sides with a tongue.” One of them, *olizati*, is surpassed in frequency by a similar verb prefixed with *po-*: *polizati* (*prste*). Some internet examples suggest that the verb *olizati* is more common in Bosnian and Serbian, rather than Croatian. Another case is the verbs *ovjesiti* and *objesiti*, which have the same etymology according to HJP (*o(b) + vješati*). They seem to occur in similar contexts; that is, *ovjesiti kablove* and *objesiti kablove* – both instances were found in the same text (see <http://www.liburnija.net/stupovi-se-raspadaju-ht-ne-reagira-veli-brgud>).

and overlapping meanings. Overlapping of the following meanings is frequent: (a) (METAPH.) SURROUND / ENCLOSE AND AFFECT A SURFACE, (b) AFFECT A SURFACE AND IMPOSE / ACQUIRE A NEW FEATURE, and (c) (METAPH.) SURROUND / ENCLOSE AND IMPOSE / ACQUIRE A NEW FEATURE.

The most frequently attested meaning in the database is IMPOSE/ACQUIRE A NEW FEATURE, followed by SURROUND / ENCLOSE AND COVER, and AFFECT A SURFACE. Because SURROUND / ENCLOSE implies that an action of any kind is performed around an object (e.g., cutting in *obrezati* ‘cut around’, sewing in *opšiti* ‘sew around’), it directly relates to MOVE AROUND (AN OBJECT). Furthermore, SURROUND / ENCLOSE sometimes implies partial or total covering and thus establishes a link not only to COVER but also to AFFECT A SURFACE (which frequently implies covering a surface with a substance; e.g., *obijeliti* ‘make white’). AFFECT A SURFACE further relates to ACQUIRE A NEW FEATURE: for example, *opernatiti se* ‘become feathered’ relates to acquiring a new feature, and at the same time indicates changes on a surface (a surface covered with feathers – this verb could thus also be considered an example of COVER), linking the two categories. Furthermore, verbs with bases denoting colors (e.g., *modar* ‘blue’ – *omodriti* ‘make blue’) can be classified as IMPOSE A NEW FEATURE and AFFECT A SURFACE (e.g., make blue by covering a surface of an object with a blue color). Therefore, the meanings COVER and SURROUND / ENCLOSE seem to be at the same level, whereas AFFECT A SURFACE could be considered a subcategory of COVER, and IMPOSE / ACQUIRE A NEW FEATURE at times appears to be a subcategory of COVER, and at other times of SURROUND.

All of the meanings we identified (see Section 3) have both concrete and metaphorical variants. The borders between meanings are fuzzy in concrete meanings of the verbs: for example, *oštetiti (se)* ‘damage/ get damaged’ denotes AFFECT A SURFACE AND IMPOSE / ACQUIRE A NEW FEATURE. The metaphorical meaning of the verbs analyzed also often overlap. Our classification in meanings should thus be understood as relative: it was necessary for analytical purposes and showing how different facets of meanings of verbs with *o(b)-* relate to each other.

We have identified some cases in which the meaning of *o(b)-* seems less related to the identified meanings: it primarily seems to refer to completion of an action (e.g., *prati – oprati* ‘wash’). In these cases, traditional approaches would speak of an empty prefix. Our approach to prefixes does not support the Empty Prefix Hypothesis. Instead, it supports the Overlap Hypothesis, according to which an illusion of emptiness happens when the meaning of the main verb and the prefix overlap. When *o(b)-* is added to a base verb (e.g., *trčati*), it perfectivizes the verb in addition to adding the meaning of circular movement to the base verb. The result is a prefixed perfective (e.g., *optrčati*).⁶¹ Perfectivization is a side effect of the meaning modification in similar cases. In many cases in which the prefix indicates completion of an action, it is also clearly related to affecting a surface (e.g., in *obrisati* ‘wipe clean’, *očistiti* ‘clean’, *obrstiti* ‘devour’, *okrpiti* ‘patch’) —specifically, removing something from it or adding something to it.⁶² In some other cases, the

⁶¹ *Ob-* is also added to perfectives; for example, *sjesti* → *opsjesti*, also resulting in meaning modification.

⁶² These verbs do not allow secondary imperfectivization and function as natural perfectives (see Janda 2007) of the base verbs.

prefix indicates completion, but it also relates to SURROUND/ENCLOSE (e.g., *okupati* (*se*) relies on a spatial image in which water surrounds an object).

As indicated, in our analysis we encountered some issues that need further examination in separate studies. Among these is the relation of *o-* and *ob-* when both can combine with the same base, and the semantic relation of *o(b)-* and other prefixes in cases in which they seem to be (near)synonyms; for instance, *o(b)-* and *na-*, *o(b)-* and *u-*, and *o(b)-* and *za-*.

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SEMANTIČKA ANALIZA GLAGOLSKOGA PREFIKSA *o(b)-* U HRVATSKOME

U radu se analizira glagolski prefix *o(b)-* u hrvatskome jeziku iz kognitivnolingvističke perspektive, s posebnim osvrtom na povezanost njegovih naizgled različitih značenja, te na proširenja njegovih prostornih značenja u neprostorne domene. Prototipno značenje glagola s prefiksom *o(b)-* uključuje ideju kružnoga kretanja u konkretnim prostornim domenama: trajektor (TR) se kružno kreće oko orijentira (LM). Ta se prostorna shema kružnoga kretanja može ilustrirati glagolom kretanja *optrčati*. Analiza ima za cilj pokazati da središnje značenje prefiksa *o(b)-*, KRETANJE OKO, ima poseban status u značenjskoj mreži jer na izravan ili neizravan način motivira sva ostala značenja. U radu pokazujemo da različita značenja prefiksa *o(b)-* ne predstavljaju nasumičan zbir nepovezanih značenja, već da čine koherentnu značenjsku mrežu. U njoj su pojedina podznačenja motivirana metaforičkim i metonimijskim proširenjima te ilustriraju sustavne i djelomično predvidljive prijenose predodžbi o konkretnim prostornim odnosima u apstraktne domene.

KLJUČNE RIJEČI: *glagolski prefiksi, o(b)- u hrvatskome, kognitivna lingvistika*

