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The verbal prefix *na-* in Croatian: A cognitive linguistic analysis

This paper examines the meaning of the Croatian verbal prefix *na-* 'onto' in a cognitive linguistic framework. Based on the analysis of a comprehensive inventory of contemporary verbs and corpora examples, the analysis identifies a few subgroups of *na-*verbs showing how seemingly distinct meanings relate to the central spatial image schema of the spatial particle *na(-)* and how individual meanings of the prefix *na-* relate to each other. Particular attention is paid to the relation of spatial meanings to those that seem less spatial or abstract, and to metaphorical transformations and abstractions that contribute to a coherent meaning network of *na-*. Based on the example of *na-*verbs, the analysis examines two hypotheses that have been intensively discussed in Slavic linguistics: the Empty Prefix Hypothesis and the Conceptual Overlap Hypothesis.



1. Introduction and preliminaries¹

The prefix *na-* 'on, onto' in Croatian² is among the most frequent verbal prefixes. It has not received much attention in research to date, apart from brief remarks on its meaning in word-formation manuals, grammars, and

- 1 This analysis has greatly profited from a meticulous reading by two colleagues, who have chosen to remain anonymous. I gratefully acknowledge their feedback on the first version of this article. I am also indebted to two anonymous reviewers of *Suvremena lingvistika* for their very helpful suggestions. Any remaining weaknesses are the author's responsibility.
- 2 All of the standard varieties based on Neo-Štokavian behave exactly the same with respect to *na-*prefixation, which makes the conclusions of this analysis valid for all the language varieties (Bosnian, Croatian, Montenegrin, Serbian). I am confident that in the literature (which I cite in this analysis) explicitly dealing with Serbian and Serbo-Croatian the same issues apply to Croatian. Some examples in this analysis come from Google, and it is neither practical nor necessarily valid to identify these examples as belonging to one of the language varieties to the exclusion of the other two or three. I have used a Croatian dictionary (Anić 1998) and a corpus of Croatian texts (*Hrvatska jezična riznica*, Croatian Language Repository, available at <http://riznica.ihj.hr/>, hereinafter abbreviated HJR) as a basis for this analysis, thus the overall label "Croatian."



(rarely) in dictionaries. Some aspects of its meaning in verbs are discussed in studies related to (among other things) encoding motion events (Filipović 2007), telicity (Novakov 2007), and the perfectivizing role of prefixes (Grickat 1966–1967). *Na-* is not among the several prefixes analyzed in Belaj's (2008) cognitive linguistics study, the only book-length analysis of Croatian prefixes. *Na-* combines with many different semantic groups of base verbs, and apparently expresses several non-related meanings. *Na-* perfectivizes some simplex verbs without changing their lexical meaning (compare imperfective *pisati* 'write' and perfective *napisati*, literally 'onto-write'),³ whereas it perfectivizes some other simplex verbs and simultaneously changes their lexical meaning (compare *gorjeti* 'burn' and perfective *nagorjeti*, literally 'on-burn'; 'get a little burned'). Language manuals differ in how many different meanings they ascribe to *na-*. Furthermore, manuals arrange the meanings of *na-* differently and, as a rule, provide little or no information on how different meanings are related. Such descriptions provide little help to L2 learners in understanding the meaning of prefixes. This analysis will pay particular attention to how seemingly unrelated meanings of *na-* relate to each other, and how they all relate to the central spatial meaning. Such an approach to spatial particles has clear advantages in L2 contexts (see, e.g., Tyler 2012). This analysis applies a semantic network model in explaining the relatedness and motivation of the meanings of the prefix *na-*. 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 prefixal 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, 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*.⁴ Part of the project *Space in South Slavic* 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.

The spatial meaning of the prefix *na-* relates to the cognate preposition *na* 'on, onto; at, to', the meaning network of which is discussed in Šarić (2008) in a cognitive linguistic framework; some commentary related to the preposition *na* can also be found in Šarić (2003, 2006). It is shown that *na* covers surface-contact scenes; that is, it applies to a superadjacency relation with direct horizontal support: in canonical cases of support (e.g., *knjiga na stolu* 'the book on the table') a trajector⁵ is in contact with a landmark and vertically positioned

3 I provide a literal translation in some cases only, concentrating on the morphological composition of *na-*verbs. In most cases, I provide an idiomatic translation only, choosing the most frequent translation equivalents. Abbreviations used in this article: LOC = locative case, ACC = accusative case, V = verb, pf = perfective, impf = imperfective.

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5 I use the terms "trajector" and "landmark" following standard practice in cognitive linguistics; for example, Langacker (2008: 70 ff.). Trajector (or "figure") is the focus element in a spatial relation, and landmark (or "ground") is the background element. The location or motion of the trajector is characterized in terms of its relation to the landmark.

above the landmark.⁶ The preposition *na* also applies to vertical support (e.g., *slika na zidu* 'the painting on the wall'), as well as to scenes with attachment and adhesion (e.g., *marka na pismu* 'the stamp on the letter').⁷ The most common usages of *na* relate to English *on* and *at*. Crucial for the semantics of the prefix *na-* is the surface–contact meaning of the preposition *na* realized in static and motion constructions (see (1a–b)), and its target meaning, illustrated by (1c), in which *na* together with the case morpheme encodes a target conceptualized as a point in space to which the verbal action is directed. The target contexts of *na* may involve concrete or abstract movement, depending on the verb.

- (1) (a) Supruga krila ljubavnika *na* krovu. (G)⁸
 'The wife was hiding her lover on the roof.'
 (1) (b) Automobil sletio *na* krov kuće. (G)⁹
 'The car landed on the roof of the house.'
 (1) (c) . . . govoreći tobože o orlovima, ciljao [je] *na* njih dvojicu. . . (HJR)
 'While seemingly talking about the eagles, he was aiming at the two of them.'

In static contexts, the preposition *na* precedes a locative nominal and, in dynamic contexts, an accusative one (*krovu*LOC and *krov*ACC 'roof' in (1a) and (1b), respectively). In static constructions such as (1a), the preposition together with the locative case morpheme (*na krovu*LOC 'on the roof') encodes a place that a trajector occupies with respect to a landmark. In dynamic constructions such as (1b), the preposition–case construction (*na krov*ACC 'on the roof') encodes the goal of the trajector's motion with respect to the landmark. In both cases, the landmark is a surface or a surface–like object; that is, an object that can be conceived of as a surface; for instance, because it resembles a surface in a geometrical abstraction. The preposition *na* in spatial constructions such as (1a–b) primarily relates to the shape of the landmark, but it can also relate to the functional relation of a trajector and a landmark. In (1c), the case–prepositional construction *na* + ACC encodes a spatial goal (concrete or abstract) of the verbal action: significantly, the verb *ciljati* 'aim' typically occurs in prepositional constructions with *na* (e.g., *ciljati na koga* 'aim at smb.') in abstract contexts¹⁰ meaning 'allude', and combines with the prefix *na-* to form the

- 6 Direct contact may not always exist, as is also the case with the English preposition *on* (Rodriguez & Egenhofer 1997).
 7 Superadjacency is divided into two categories covered by *na* and (*iz*)*nad*, which are distinguished by the presence (*na*) or absence (*(iz)nad*) of contact between a trajector and a landmark.
 8 The examples in this article were either gathered in Google searches (abbreviated G) or extracted from the online corpus HJR. Searches were performed in February and March 2012.
 9 Examples (1a) and (1b) lack otherwise obligatory auxiliaries because they come from newspaper headlines in which auxiliaries are often left out.
 10 In a concrete spatial scenario in which 'aim at smb.' implies using, e.g., a concrete object, a weapon, the verb most frequently occurs with the preposition *u*; e.g., ... *puni pušku i cilja u šumu* (HJR). 'He/she is loading his/her gun and aiming at the woods.' In this scenario, *ciljati* also combines with direct objects, as in ... *smireno [je] ciljao lijeve rašlje* (HJR) 'He calmly aimed at the left forked branch'. In contexts with the preposition *u*, only one part of the landmark is normally aimed at.

perfective *naciljati* 'take aim'.¹¹ In its abstract usages, the construction *ciljati na* refers to goals of aspirations, thoughts, allusions, and so on.¹² In (1c), *ciljati* refers to fictive motion: words are directed towards a spatial goal.

The inventory of *na-*verbs that served as a basis for this analysis is extracted from the monolingual contemporary dictionary by Anić (1998), approximately 300 verbs. I have added some verbs to this inventory that I intuitively considered frequent and if my intuition was confirmed in the corpora consulted. Anić certainly does not list all existing *na-*verbs—for example, the verbs that can be found in older sources—but this dictionary contains most commonly and frequently used verbs, and so the inventory is suitable for a semantic description concentrating on modern language usage.¹³ Most of the verbs analyzed exist in a non-prefixed form; that is, the non-prefixed forms correspond to freestanding words (e.g., *pisati* – *napisati*). However, in some cases the root + infinitive morpheme combination is non-lexical; that is, it does not correspond to a freestanding verb (e.g., *načeti* 'broach, tackle': **četi*). I nevertheless analyze the semantic profile of *na-* in some similar verbs if the prefix semantically clearly relates to other usages of *na-* and if *na-* stands in a relation to other prefixes that can be added to the same root + infinitive combination (e.g., *načeti* vs. *početi* 'start').

Before I illustrate the approach to *na-* in the grammatical descriptions, I briefly outline the main issues related to prefixes and perfectivization in Slavic.

In Croatian, as in the Slavic languages in general, simplex verbs are imperfective by default (primary imperfectives, impf1); for instance, *pisati* 'write'. However, these languages have a certain number of simplex perfectives (e.g., *baciti* 'throw'). Via prefixation or suffixation with the suffix *-nu-* (*viknuti*), impf1 (*vikati*) becomes perfective (pf). The prefixed pf verbs can be imperfectivized (secondary imperfectivization, impf2) by suffixation with a few suffixes. Accordingly, with respect to aspect, verbs relate in the following manner: impf1 → pf → impf2 (e.g., *krcati* 'load' → *nakrcati* → *nakrcavati*). Prefixed perfectives and impf2 always have the same semantics and differ only in aspect, whereas pf verbs differ in aspect and semantically from their bases, impf1 verbs. Due to the different semantics of impf1 verbs and the pf ones derived from them, research on Slavic (e.g., Filip 2000; Manova 2007) considers the impf1–pf relation derivational morphology, whereas the pf–impf2 relation is usually considered inflectional. All prefixed verbs are pf, and usually also telic. If a prefix is attached to a pf verb, the verb remains perfective (e.g., pf *baciti* 'throw' and pf *nabaciti* 'throw on; let slip').

11 The prefixed verb *naciljati* in constructions with *u* retains the primary meaning of *ciljati*: it co-occurs either with prepositional constructions with *u* or with direct objects. However, *naciljati* does not combine with *na* to express the extended abstract meaning 'allude'.

12 For instance, in the expressions *ciljati na visoko* 'have high aspirations' and *shvaćate li na što ciljam* 'do you understand what I am aiming at'. Source: HJP, <http://hjp.srce.hr>.

13 Including other sources would admittedly increase the number of verbs. However, having experience with collecting prefixed verbs from several sources, including available corpora, I am confident that no new semantic type would appear in a more extensive database.

Research on Neo-štokavian standard varieties (as well as on Slavic in general) presupposes that prefixes in combinations with certain verbs merely perfectivize them, in contrast to other combinations in which prefixes affect the lexical meaning of verbs. For example, Filipović (2007: 15), following Grickat's (1966/67) study on Serbo-Croatian perfectivizing prefixes, claims that *na-* can be employed in "pure perfectivization"; that is, it signifies only a change of aspect without adding any other meaning.

I approach *na-* in this analysis as a unit that bears meaning in all its usages. Thus, I also include in the analysis those prefixed verbs whose simplex bases are pf, but I am aware of and emphasize the fact that prefixed verbs derived from simple perfectives (e.g., *nabaciti* 'throw on; let slip') differ from examples in which *na-* is added to a simplex impf: the difference is that prefixed verbs derived from simple perfectives do not entail a change in aspect, whereas in the default case prefixation with *na-* signifies derivational and aspectual change. In the default case, the prefix adds a new meaning or modifies the existing meaning.

Two word-formation manuals, Babić (1986) and Klajn (2002), can illustrate the approach to *na-* in contemporary word-formation literature: Babić (1986: 481–482) suggests no relation between the five meanings he ascribes to *na-*, which are: (a) an action is completed to a significant degree, (b) coming to a surface or upper part of an object, (c) leading to a result, (d) accumulating gradually, to a certain degree, and (e) an action is at the beginning only, accomplished to a small degree. A clear system in ordering the various meanings in this source is not apparent. Klajn (2002: 257–259) identifies nine meanings, arranging them in three groups, and adds a tenth subgroup of verbs in which the meaning of *na-*, as he puts it, 'cannot be defined.' Advantages of Klajn's approach compared to Babić's is that he considers the meanings of the prefix *na-* related to the preposition *na* first, and clusters together different subgroups of *na-*verbs relating to quantification. A separate group is verbs in which *na-* "has a perfectivizing function only" (Klajn 2002: 258). However, Klajn's criteria for the subdivision of verbs within the group related to the preposition *na* are not clear, neither are the criteria according to which some verbs are put into this "spatial group," and not into the group in which *na-* is assumed to have a perfectivizing function only (and vice versa). Klajn's and Babić's overviews do not indicate whether there are relations between different meanings, and what their nature is.

I argue that spatial motivation is nevertheless observable in many cases when the word-formation manuals suggest that the meaning of *na-* is, for instance, 'lead to a result' (Babić on, e.g., *nabosti* 'prick', *namočiti* 'soak'), or that a verb is a pure perfectivizer (Klajn on, e.g., *nalickati (se)* 'slick oneself up'), indicating no spatial motivation for *na-*. Prepositional phrases with *na* 'on' co-occurring with prefixed verbs in typical constructions indicate a spatial motivation:

- (2) Nju su grubo odgurnuli, pa se u padu *nabola na* čavao. (HJR)
'She was rudely pushed and she pricked herself on a nail while falling.'

The possibility of secondary imperfectivization¹⁴ with some *na-*verbs (e.g., *nabadati* 'prick' is an imperfective verb derived from *nabosti*) also speaks against the idea of an empty *na-* that would merely perfectivize the base verb (on the notion of empty prefixes; see, e.g., LeBlanc 2010: 14–15). What is also as a rule overlooked in the existing descriptions of *na-* is that some verbs (e.g., *namočiti* 'soak') emphasize results visible on objects' surfaces—that is, they rely on spatial images—and that some base verbs in which *na-* seems to be an empty perfectivizer can also be perfectivized with other prefixes. For instance, *bosti* 'prick, stick, stab' can also be perfectivized with *u-* 'into', *pro-* 'through', and so on, and *močiti* 'wet' with, for example, *s-* and *u-* (*smočiti* 'wet', *umočiti* 'dip'). Thus, an important question is the semantic difference between a few possible prefixed forms, especially if these forms seem to be near-synonymous, and additionally seem not to significantly alter the base verb's meaning. In Babić's (1986) group "lead to a result," there are also some other verbs with a spatial profile; that is, related to the spatial meanings of the preposition *na*. For example, *namamiti* 'lure' relates to spatial goals, which becomes apparent in a comparison of the prefixed verb and the prepositional construction with the base verb and the preposition *na*: *mamiti na* 'lure into' (literally 'lure onto'). *Nanišaniti* 'take one's aim at, sight' also relates to targets conceptualized as points in space (compare *nišaniti na* 'take one's aim at, sight').¹⁵ Some other verbs refer to actions occurring on surfaces; for example, *napisati* 'write (down)' relates to the prepositional phrase *pisati na* 'write on', and *natrljati* 'rub' to *trljati na* 'rub onto'.

Studying verbal prefixation in Slavic implies considering a number of specific issues of theoretical significance: the perfectivizing function of prefixes, prefixes' function in altering the lexical meaning of base verbs and the blending of that function with the perfectivizing function, prefixes' role in expressing lexical aspect, and how prefixes change constructional properties of verbs; for example, base verbs and prefixed verbs may require different types of objects, or base verbs and prefixed verbs may differ in terms of transitivity.¹⁶ The reminder of this section introduces the theoretical issues central to this analysis: the Overlap Hypothesis vs. the Empty Prefix Hypothesis, and the distinction between concrete and abstract meanings of prefixes.

One of the chief claims of this paper is that there are no empty prefixes. The assumption that verbal prefixes are empty in some of their usages—that

14 The secondary imperfectivization criterion is frequently used in discussions of Slavic "empty" prefixes; that is, pure-perfectivizing prefixes vs. meaning-changing prefixes; see, for example, Kempchinsky and Slabakova (2005: 372–373); on criticism of the term "secondary imperfectivization," see Toops (1998).

15 Examples from HJR show that *nišaniti* and *nanišaniti* also occur with the preposition *u* in concrete spatial scenarios. In these scenarios, these verbs also less frequently occur with direct objects.

16 Stošić (2007: 339) shows that, unlike simplex verbs, verbs derived with certain prefixes are capable of expressing dynamic spatial phenomena, and that prefixes may contribute the meaning of the reference-frame shift to a base verb; for example, *protrčati* 'run through' adds the meaning of the reference-frame shift to the simplex *trčati* 'run', which does not imply that shift.

is, pure aspectual markers with no semantic content—has a long tradition in Slavic linguistics (see, e.g., Švedova et al. 1980: 583; Zaliznjak & Šmelev 2000: 82). The existence of empty prefixes is implicitly assumed when a meaning or a function of a prefix is described as “pure perfectivization.” Perfective verbs with prefixes that are apparently empty as a rule do not allow secondary imperfectivization; that is, they do not have impf2 counterparts. Many linguists have challenged the “emptiness” of prefixes, coming up with a contrasting hypothesis known as the Overlap Hypothesis (proposed in Vey 1952; Schooneveld 1958; Janda & Nessel 2010).¹⁷ The Overlap Hypothesis implies that prefixes as aspectual markers contribute semantically, but their contribution remains vague or imperceptible due to the conceptual overlap of a prefix with the meaning of the verbal stem. (The same phenomenon is referred to as subsumption; see Dickey 2012: 73–74). For example, in the pf *okružiti* ‘encircle’, the verbal stem and the prefix *o-* have very similar meanings, and so the meaning of the prefix *o-* ‘spatial surrounding in a circular form’ is already part of the simplex impf *kružiti*. The semantic content of the base verb is more obvious than the content of the prefix, and this can lead to an interpretation of *o-* as a pure aspectual marker; that is, a perfectivizer. In many cases discussed in the following sections, the semantic contribution of *na-* is present, but is less obvious because of the overlap of its meaning with the meaning of the base verb. The choice of a prefix in its perfectivizing function is not arbitrary: any verb cannot select any prefix. The combination of a prefix and a verb is due to the meaning of the prefix that overlaps with the lexical meaning of the base verb.

Hampe (2002), investigating English verbs that occur with and without particles, argues that verbal particles contribute to end-point profiling and give the resultant state cognitive prominence. Advocating ideas similar to the ones by supporters of the Overlap Hypothesis, she terms the phenomenon arising in combinations of English verbs with certain particles “conceptual overlap”: the idea of a conceptual overlap is highly relevant for combinations of *na-* with some verbs; specifically, with verbs whose base forms encode actions necessarily linked to surfaces.

In this analysis, I reject the idea of *na-* as a pure perfectivizer in Croatian. The question of whether *na-* can be purely perfectivizing mostly comes down to a question of whether the relevant *na-* perfectives and their imperfectives without *na-* operate as an aspectual pair in a morphosemantic feature opposition. This issue has been widely discussed in Slavic linguistics, mostly in the context of Russian. The discussion has generally arrived at rejecting aspectual pairedness (for recent results, see Janda 2007).

My views on *na-* align with independent arguments in Slavic linguistics for the non-pairedness of perfective and imperfective (e.g. Isačenko 1960; Bertinetto & Delfitto 2000; Janda 2007).

17 Gallant (1979) claims that prefixes select and emphasize some pre-existing meanings of base verbs rather than adding meanings to the base verbs. Gallant extends the notion of prefix-base compatibility from prefixed aspectual partners to lexical derivatives.

Another central issue of theoretical significance in this analysis is the distinction between spatial and abstract meanings of verbal prefixes. Many analyses assume a more or less clear distinction (see, e.g., Shull 2003; Dickey 2012). In her approach to the relation between the spatial meanings of prefixes and their telic and perfectivizing functions, Shull (2003) draws a distinction between the prefixes' spatial and abstract uses, and argues against the view that abstract prefixation (i.e., abstract uses of spatial prefixes) is necessarily the result of direct metaphorical mappings of the spatial profiles of prefixes to abstract domains. Shull (2003: 184–185) further suggests that all prefixes with spatial meanings share an abstract profile of two states: the initial state s^1 and the resultant state s^2 , and tend to become goal prefixes profiling the attainment of the resultant state s^2 . This implies that an abstract schema, the TRANSITION FROM s^1 TO s^2 , is common to most prefixes. That abstract transition schema neutralizes the difference between different prefixes in some contexts.

This analysis uses the example of *na-*verbs to examine the nature of abstract and concrete meanings and whether the distinction between concrete meanings, spatial ones, and abstract ones is absolute or relative.

Following theoretical premises of cognitive linguistics (e.g., Janda 1986; Twardzisz 1994; Tabakowska 2003; Przybylska 2006; Klikovac 2006; Belaj 2008; Nessel 2010), this analysis develops a semantic network of the verbal prefix *na-* in Croatian, particularly concentrating on relations between apparently unrelated meanings. Special attention is given to how spatial meanings relate to apparently non-spatial meanings, and to metaphorical transformations and abstractions that are responsible for some derived meanings of *na-*. I first look at the semantic profile of the prefix *na-* in spatial constructions, especially motion constructions (Section 2), and then at its profile in other constructions (Sections 3, 4). I give special attention to examining if and how the semantic profile of the prefix in motion constructions, and generally in spatial constructions, influences its semantics in non-spatial constructions. I examine the semantics of *na-* with emphasis on processes of meaning change and extensions, and metaphor that can explain the links between apparently separate meanings. Section 5 presents a semantic network of *na-*verbs and conclusions.

2. The spatial meaning of *na-*: Motion verbs and other verbs involving movement

First, let us take a look at a few verb types combining with *na-* that can loosely be termed motion verbs. The number of verbs in this group is relatively small compared to other groups of verbs extracted from Anić (1998). These verbs include several self-motion verbs (e.g., *naletjeti*, 'strike, crash against', literally 'onto-fly'), change-of-posture verbs (e.g., *naleći*, 'lean heavily against', literally 'on-lay'), caused-motion verbs, and verbs with extended motion meanings designating motion in a wider sense; for example, movement of body parts that does not result in change of location. That movement type often coincides

with a change of the form or appearance of body parts, or their owner (e.g., *naježiti se* 'get goose bumps', *nakostriješiti se* 'bristle'). In addition, a few verbs in Section 2.5. illustrate a close connection between concrete and fictive motion.

2.1. Self-motion

Interestingly, only a limited number of self-motion verbs combine with *na-* and, when they do, their spatial features weaken and these verbs develop extended meanings. The examples either attested in Anić and/or more or less frequently found in the corpus include¹⁸ *naići* 'come along; run into'¹⁹ (literally 'onto-go'), *najuriti* 'run onto; throw out; dismiss', *natrčati* 'run onto/into', *nagaziti* 'tread/step on', *naletjeti* 'fly/run into/onto', *naskočiti* 'jump onto', *natrapati* 'step in, run into', *nabasati* 'run into, stumble upon', *nagrnuti* 'rush into', *nahrupiti* 'rush, swarm into', *nasrnuti* 'rush at/into; attack', *navaliti* 'swarm into, go for; attack', *namjeriti se* 'come across', and *navratiti* 'call on, drop by'.²⁰ In the HJR corpus, the frequency of these verbs varies: *naići* is the most frequent with 3,133 occurrences, whereas *naskočiti* is the least frequent with only 37 occurrences.

With the base verbs used in a strict motion sense,²¹ the manner of motion is expressed by the verb root (*trčati* 'run', *skočiti* 'jump', *letjeti* 'fly'), and the prefix *na-* contributes the meaning 'onto a surface'²² (*natrčati*, literally 'onto-run'; *naskočiti*, literally 'onto-jump'; *naletjeti*, literally 'onto-fly'). The verbs lexicalize actions involving motion and surface-contact notions.

In the HJR corpus, these verbs tend to combine with constructions containing the preposition *na* and accusative nominals. For instance, typical constructions with the verb *naletjeti* contain the preposition *na* + ACC (see (3a)), although other prepositional and case constructions can also be found (the dative *mu* in (3b) and the prepositional accusative *u njihov ubogi dom* in (3c)):

- (3) (a) Bila je ogromna sova, što je *na prozor naletjela*.
'That was a huge owl that flew into the window.'

- 18 Not all these verbs exist in unprefixed forms (e.g., **valiti*). Furthermore, some base verbs are less frequent or infrequent in a strict motion sense.
- 19 Idiomatic translations of *na-*verbs in this paragraph more often contain *into* than *on(to)*. However, *na-* in all the verbs in the source language primarily relates to the surface image schema, literally implying 'on(to)'. 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). Johnson (1987: 126) lists the following among the most important image schemas: CONTAINER, PATH, CENTER-PERIPHERY, NEAR-FAR, PART-WHOLE, CONTACT, and SURFACE. As Oakley (2007: 217) emphasizes, many image schemas have topological characteristics.
- 20 Filipović (2007: 127) identified only five motion verbs prefixed with *na-* (*naletjeti*, *najahati*, *natrčati*, *navaljati*, *naskočiti*) in her corpus: *naletjeti*, literally 'onto-fly' is the verb with the greatest number of tokens (six). *Navaljati* 'roll onto' is not listed in Anić's dictionary. Seven occurrences of the verb were found in HJR. In two examples only, *navaljati se* functions as a self-motion verb, whereas other constructions express caused motion.
- 21 This does not imply that these verbs do not have extended metaphorical meanings.
- 22 "Surface" in similar contexts encompasses objects resembling surfaces (surface-like objects), and objects that can be conceptualized as surfaces.

- (3) (b) Samo *mu* je *naletjela* misao: Divljaci!
 'A thought came into his mind: Savages!'
 (3) (c) . . . srećom što je iznenada *naletjela u njihov ubogi dom* . . . (all HJR)
 'The good fortune that suddenly turned up at their poor home.'

It is indicative that some verbs from this group do not refer to motion alone, or only secondarily refer to motion. For instance, *naići* and *namjeriti se* 'come across, run into' do not refer to motion only. *Naletjeti* is also usually used in a sense different from a strict motion one, implying 'bump into'. In the greatest number of examples with the verb *nadoći* 'rise; come to/at', *doći* 'arrive, come' could function as its synonym. The landmarks with *nadoći* are abstract, and *na-* encodes reaching an abstract goal, which is related to the meaning of the preposition *na* that regularly combines with abstract landmarks in directional and locative contexts. Examples (4a–b) illustrate frequent usage types of the construction *nadoći na* + ACC: physical motion onto stands for mental activities, in which the verb implies 'find', 'remember':

- (4) (a) Stoga je FIA *nadošla na praktično rješenje*. . . (G).
 'Therefore FIA came to a practical solution.'
 (4) (b) Eto ove godine direkcija je *nadošla na jednu također hvale vrijednu akciju* . . . (G).
 'This year the board thought of a praiseworthy initiative.'

Several corpus examples were found in contexts in which *nadoći* refers to water rising: the meaning 'rise' is listed as the first in the HJP dictionary.²³ The prefix *na-* in *nadoći* encodes superadjacency and vertical ascent as does the preposition *na* in its surface-contact contexts. Some verbs implying vertical ascent are found in other semantic groups of verbs (see Section 4) and have English translation equivalents in verbs with the particle *up*.

The verb *najuriti* 'run onto' occurs in 51 examples in HJR; however, the greatest number of constructions are caused motion, bearing the meaning 'chase away', and only a few occurrences apply to self-motion contexts; for example:

- (5) A onda nenadano *najuri* na njega orkan saznaje. . . (HJR).
 'And then suddenly a flash of understanding strikes him.'

Filipović (2007: 127) claims that motion verbs prefixed with *na-*²⁴ cannot be followed by any other preposition except for *na* (whereas many verbs prefixed with *od-*, *do-*, *iz-*, and *u-*, for example, can be followed by the preposition *na*, and describe a relevant situation type without a need for the *na-*verbs.) My analysis of the examples from the HJR corpus confirms the tendency of motion *na-*verbs to combine with the cognate preposition; however, *na* is not the only preposition the verbs combine with.

23 HJP, <http://hjp.srce.hr/index.php?show=search>.

24 This probably applies to the five verbs from her corpus.

A specific type of self-motion involving surface-like goals-motion onto a surface is not frequently lexicalized in Croatian (on the other hand, motion into container-like objects is regularly lexicalized: the prefix *u-* 'into' readily attaches to all self-motion verbs). Self-motion of an agent onto a surface is not a salient semantic feature of *na-*verbs seen as a whole: only a restricted number of self-motion verbs combine with *na-* to express this meaning. *Na-*verbs that originally expressed motion proper have developed extended meanings (e.g., *naići*); these meanings are still linked to the original motion component, which has become non-salient and secondary. Salient meaning features realized with several self-motion verbs are 'surface as an obstacle', 'finding by chance', 'bump into', 'sudden movement', and 'accidental contact'. The non-prominence of the semantic feature 'move onto' is perhaps among the reasons why *na-V se*²⁵ quantificational constructions are widespread with motion verbs (see Section 4).

2.2. Change of posture

Two perfective simplex change-of-posture verbs—that is, verbs encoding movement of a body or a body part—combine with *na-*: *sjesti* 'sit down' and *leći* 'lie down', to derive *nasjesti* and *naleći*. The desubstantival verb *nalaktiti se* 'lean one's elbows on a surface', encoding contact and support, also belongs to this group. This verb, like many other *na-*verbs, is a lexicalization of a prepositional phrase (*na lakat/laktove* 'onto the elbow(s)'). Contact and support are also semantic features of the body-movement verb *nasloniti se* 'lean oneself on'. Used without the reflexive *se*, *nasloniti* encodes caused motion.

Naleći occurs relatively infrequently in HJR in examples expressing change of body posture (i.e., implying 'lie down onto something'), that is, a concrete or metaphorical movement of an object onto the surface of another object, when the end position of the moving object resembles lying, as in (6):

- (6) . . . tmina što se *nalegla* oko osamljene kućice. (HJR)
'The darkness which leaned heavily against his isolated little house.'

In HJR, *nasjesti* is attested in 226 examples, of which, however, only ten relate to movement in space, as in (7 a–b):

- (7) (a) . . . brod je *nasjeo* na muljevito tlo. (HJR)
'The ship got stranded on the muddy bottom.'
(7) (b) . . . glad . . . *nasjela* u pore tijela. . . (HJR)
'Hunger settled in the pores of his/her body.'

Spatial images to which examples like (7 a–b) are linked have influenced the emergence of constructions with *nasjesti* and abstract objects in which sitting down is transferred into metaphorical realms. The largest number of examples with *nasjesti* relates to the meaning 'fall for a trick', which is extended from the original spatial meaning. *Nasjesti* in this meaning in pre-

25 With the *na-V se* construction, I refer to verbs derived with *na-* and the reflexive *se*; for example, *našetati se*, literally 'onto-walk self'; 'walk one's fill'.

positional constructions regularly co-occurs with *na*; see (8a). The alternative construction contains a dative as in (8b) (*lažnim iluzijama*):

- (8) (a) Srbi neće *nasjesti na* lažna obećanja. (HJR)
 'Serbs will not fall for false promises.'
 (8) (b) Nemojte *nasjesti lažnim iluzijama* . . . (HJR)
 'Do not fall for false illusions' (literally 'onto-fall false illusionsDAT')

Why has *nasjesti* experienced this meaning extension and acquired the meaning 'fall for a trick', but not *naleći*? The explanation could be related to the fact that people accidentally sit down onto things (i.e., not always noticing what is on the surface they sit down on). This can result in unwanted effects, such as hurting oneself or dirt on one's clothes. On the other hand, people are more cautious when lying down; that process implies much more attention and preparation.

Two other relatively frequent perfective posture verbs, *kleknuti* 'kneel down' and *čučnuti* 'squat down', are not attested in prefixed forms with *na-* (*nakleknuti* and *načučnuti*) either in Anić or in internet searches, although there are no semantic constraints, certainly not for *nakleknuti*: the action always implies contact with the surface the knees are located on, and the base verb regularly occurs in constructions containing adverbials with the preposition *na* (*kleknuti na* jastučić (G) 'kneel down on a small pillow').

The *-nu-* verbs are formally neither of the type of impfl verbs nor of the type of unprefixated pf verbs. They are derived from impfl verbs by the addition of *-nu-* (impfl *klečati* 'kneel' is the base of the pf *kleknuti* 'kneel'; impfl *čući* is the base of the pf *čučnuti*). *-Nu-*verbs express a perfective semelfactive meaning by default and this may also shape the semantics of their *na-*derivatives; that is, it may "block" these derivatives.

2.3. Caused motion

Caused-motion *na-*verbs are quite frequent in the inventory examined. Verbs listed in Anić include *nabacati* 'throw on a heap, heap up', *nabaciti* 'throw on', *nabiti* 'cram/force down', *nagnati* 'drive, urge on; force', *naturiti* 'force on; push into', *navući* 'pull/put on', *nagurati* 'cram into', *natovariti* 'load (up)', *nakotrljati* 'roll onto', *najuriti* 'throw out; dismiss', *naseliti* 'populate', *nabosti* 'spit on, pierce, run through', *nataknuti* 'put/slip/fix on; spit on', and *natandrčiti* 'impose/force on'.²⁶ A large number of verbs from this group are verbs of putting (Kustova et al. 2009). Some verbs encode change of location—that is, putting or transferring sth./smb. onto a surface-like object (e.g., people to another territory, *naseliti*)—whereas others indicate putting something onto an object (this subgroup often yields verbs with the particle *on* in English; e.g.,

²⁶ Also in this paragraph, some verbs do not have *on(to)* in their idiomatic translations into English, even though *na-* in the source verbs relates to the surface image schema. In some cases, as with *natandrčiti*, the unprefixated form does not have a meaning similar to that of the prefixed verb (*tandrčiti* 'rattle'). Via metaphorical extensions, the prefixed verb has acquired quite a different meaning.

nataknuti 'put/slip/fix on'). With some verbs, the final location of the trajector is higher than its original location (*naprtiti* 'load on one's back', *natovariti* 'burden, load'), and so *na-* additionally evokes the vertical-ascent spatial schema. Some verbs may imply harm and damage, such as *nabosti*. In most cases *na-* is added to imperfective verbs to derive prefixed perfectives: it attaches to perfective simplex verbs in individual cases only (e.g., *baciti* – *nabaciti*). Some verbs also occur in self-motion constructions; for instance, *najuriti* occurs in individual constructions with the meaning 'run onto'.

Caused-motion constructions include, in addition to a trajector (direct object) and a landmark (prepositional phrase), an agent (Mover) that causes the trajector to move; the goal of the motion is an object conceptualized as a surface. The trajector establishes physical contact with the outer planes of a landmark, as in (9):

- (9) Onda je negativac na pozitivca *nakotrljao* neko bure. . . (G)
'Then the villain rolled a barrel onto the good guy.'

Caused-motion *na-*verbs tend to combine with prepositional *na-*phrases indicating goals. For example, *natovariti* occurs in 186 examples in the HJR corpus, and constructions with the preposition *na* in the goal phrases prevail: these comprise 106 altogether; that is, 57% of all the examples.

Its meaning extension makes *nabaciti* 'heap up' (both the simplex *baciti* and the prefixed verb *nabaciti* are perfectives) an interesting verb: It occurs in three meanings that yield slightly different construction types: (a) an agent throws an object onto a surface, in which case the verb roughly corresponds to the meaning of the prepositional phrase with the simplex *baciti* and the preposition *na* (see (10a): the difference between *nabaciti na hrpu* and *baciti na hrpu*, both literally 'throw onto a pile', is in that *nabaciti* implies a greater quantity of objects thrown. This meaning blends with the meaning sometimes singled out as a separate one: 'direct something towards somebody', which is most often realized in constructions from sports contexts (e.g., *nabaciti loptu*); see (10b):

- (10) (a) Evo ovdje ima nešto slika . . . pa ću ih samo ovako *nabaciti na hrpu* (G).
'There are some photos here . . . I will just heap them up.'
(10) (b) Zar doista čekamo trenutak da . . . Dado Pršo . . . sam sebi *nabaci loptu*. (HJR)
'Do we really await the moment in which Dado Pršo throws the ball to himself.'

Another meaning of *nabaciti* 'outline, mention', is a metaphorical extension from the spatial meaning. The extended meaning relates to the core spatial image of *na-*: being on a surface does not imply depth; thus, the surface notion extends to a small number and/or limited temporal duration:

- (11) Tek je Martin Mikulić *nabacio* koju opasku. . . (HJR)
'Only Martin Mikulić let a couple of remarks slip.'

The meaning coincidence of the prefix and the central spatial meaning of the preposition *na* is observable with many caused–motion *na*-verbs. In some constructions, the prefix seems to repeat the information contained in the preposition (e.g., *nabaciti na* in (10a)).

However, the meaning of some base verbs significantly differs from the meaning of prefixed *na*-verbs: prefixed verbs have either acquired new meanings via metaphorical extensions, or base verbs as parts of prefixed forms have lost some of their original meanings. For example, *na-* is combined with the imperfective *vući* ‘pull, haul’ to form *navući* ‘put on’; see (12a). In constructions without prepositional landmarks, the prefix encodes the path of an action with an implicit landmark (the body, as in (12b)).

(12) (a) . . . *navukao* je na noge crne kožne šlape. . . (G)

‘He put black leather slippers on his feet.’

(12) (b) S police Lidla uzeo majicu, *navukao* je i pobjegao van. (G)²⁷

‘He took a T-shirt from a shelf in the Lidl shop, put it on, and ran out(side).’

As a consequence of the modified meanings, some prefixed and related unprefixed forms of caused–motion verbs cannot be used in the same construction types: this is the case with *vući* and *navući*. Accordingly, the sentence **Vukao je na noge šlape* ‘He was pulling slippers onto his feet’ is unacceptable (but see 12a), whereas *baciti* and *nabaciti* can be used in the same construction type (compare . . . *pa ću ih samo ovako baciti na hrpu* and (10a)).

2.4. Extensions of motion meanings: Movement of body parts; change of (surface) appearance

Some *na*-verbs refer to movement of body parts or movement on objects’ surfaces. This type of motion²⁸ is usually accompanied by a change of appearance of the respective body parts or surfaces. With this verb type, the meaning of *na-* overlaps with the meaning of the base verbs: for example, *naćuliti* ‘prick up (ears)’, *napućiti* ‘pout (lips)’, *naježiti se* ‘get goose bumps’, *nakostriješiti se* ‘bristle/stand up’, *namrgoditi se* ‘frown; wrinkle one’s forehead’, *narogušiti se* ‘bristle up’, *nagužvati (se)* ‘wrinkle, crease’, *namreškati (se)* ‘ripple, become rippled’, and *naborati (se)* ‘wrinkle, become wrinkled’.

Na- attaches to verbs whose base forms encode a change of appearance on the surface of an object that can be caused either by an agent’s volitional act (e.g., an agent’s facial movements change the appearance on his or her face, such as in *naborati (čelo)* ‘wrinkle forehead’), or by an outer force (e.g., the wind causes movement of water in *bura je namreškala more* ‘the bora rippled

²⁷ This newspaper headline is missing the otherwise obligatory past-tense auxiliary.

²⁸ “Motion” in this context should be very loosely understood. For this reason, in this section the term “movement” is used always when possible, and “motion” is kept as a superordinate category. The verb type discussed in this section is, of course, very different from motion verbs proper.

the sea'). Changes on objects can also happen in non-agentive situations (indicated by the reflexive *se*; e.g., *naborati se*).

This type of motion is often observable with verbs expressing the following (among other things):

- Disturbance on the surface of a liquid or a solid body during a certain movement in place caused by a natural force (*namreškati (se)* 'ripple, become rippled');
- Body movement: verbs referring to movements an agent performs with part of his/her body; for instance, an agent moves his lips or ears (*naćuliti, napućiti*), or makes a facial expression by moving part of his face, generally in response to some cause, such as an emotion (e.g., *namrgoditi se* 'frown').

With verbs such as *naborati se* 'wrinkle', the appearance of a three-dimensional object is changed on its surface. The change is clearly visible on the object's surface, which is in focus. Flat objects (e.g., fabric, dough) are affected in their entirety. Alternatively, with objects typically conceptualized as possessing an inner and outer space, the outer parts are affected.

With individual verbs, movement is perceivable as a vertical motion of a limited range (e.g., *nakostriješiti se* 'bristle') or the level of affected surfaces seems to increase. That is, there is the impression of a vertical ascent of some parts of the affected or moving surface.

Unlike motion verbs proper, these verbs do not regularly combine with prepositional *na-*phrases, nor with other goal phrases. Frequent constructions are direct object, such as (13a), and reflexive, such as (13b):

(13) (a) Maleni dodir će *namreškati lice*. (G)

'A gentle touch will crease the face.'

(13) (b) Pepa *se* Belićeva sva *nakostriješila*. . . (G)

'Belić's Pepa got all bristled up.'

2.5. From concrete to fictive motion

Na- is added to a few imperfective verbs to derive perfectives that refer to completion of verbal actions. These are the perception verbs²⁹ *namirisati* and *nanjušiti*, both 'smell/sniff (out), find out', in addition to *napipati* 'find by feeling/groping'. *Napipati* refers to a concrete movement (typically of hands), whereas perception verbs refer to fictive motion. *Napipati* directly relates to other motion *na-*verbs, and verbs referring to actions taking place on surfaces. The meaning feature 'find' relates *napipati* and the frequent motion verb *naići*. The imperfective *pipati* 'feel, touch, grope' encodes contact of an agent with an object's surface: typically, visible, outer parts of an object are affected by touching. Thus, the combination of *na-* and *pipati* is expectable due to the semantic compatibility of the prefix and the base verb. *Na-* additionally contributes a

29 Three other perception verbs are also prefixed with *na-*: *nazreti* 'discern', *naslutiti* 'have a slight presentiment', and *naćuti* 'get wind of'. However, in these verbs *na-* has a quantificational meaning ('V a little'), and they thus belong to the verbs discussed in Section 4.

sense of result. *Napipati* could have influenced the prefixation of *mirisati* and *njušiti* with *na-* to yield the meaning 'find by performing V'. These verbs typically occur in transitive constructions with abstract and concrete objects that do not contain prepositional phrases with *na*:

(14) (a) Oporba je *namirisala* skandal i napala. (G)

'The opposition smelled a scandal and attacked.'

(14) (b) Medju to je Burko na drvetu *nanjušio* vjevericu. . . (HJR)

'In the meantime Burko caught the scent of a squirrel on the tree.'

The combinability of these verbs and *na-* relies on the spatial profile of *na-* that includes two decisive image schemas: target and surface contact. Slavic verbal prefixes usually contribute additional meanings together with the spatial ones: with verbs of perception, *na-* adds perfectivity and telicity, and so this group shares semantic features with the verbs discussed in Section 3. The prefix changes the construal from an activity that can go on without producing a result to a completable process that yields a result.

3. Goal attainment: Conceptual overlap of *na-* and base verbs

Verbs expressing "goal attainment" encompass the largest number of verbs found in Anić (1998), approximately 150. Upon closer examination of these verbs, it became important to single out two semantic subtypes, in which the semantic contribution of the prefix *na-* seems apparent. These two subtypes are prototypical and representative for the entire group of goal-attainment verbs. Many other verbs can be related to them via metaphorical extensions.

Subtype (A) includes creation verbs, such as *napisati* 'write (down)', *nacrtati* 'draw', *naslikati* 'paint', and their near-synonyms, such as *načrčkati* and *načvrljati*, both 'scribble (down)', and *našvrakati* 'scrawl'. It is noteworthy that all the verbs from the semantic group 'write' and 'draw' follow the same model; that is, they take *na-* to derive prefixed perfectives.

Another subtype, (B), includes verbs such as *nauljiti* 'oil', *namazati* 'smear', *nalijepiti* 'stick/glue to', *našiti* 'sew onto', *natrljati* 'rub (down)', *našminkati* 'put on makeup', and *nalaštiti* 'polish', all encoding application of a substance (e.g., oil, cream, etc.) to a surface. These verbs can also be understood as caused-motion verbs because they imply putting something onto a surface: a substance is transferred from a previous location to a new one.

The base verbs in subtype (A) encode actions taking place on a surface: an agent uses an object to create a form on a certain surface. Typical surfaces used for writing and drawing are, for instance, paper, canvas, or walls. Writing and drawing always happen on a real or imagined surface. Accordingly, the surface image schema is already present in the event scenario of the base verbs *pisati*, *crtati*, and their (near-)synonyms. *Na-* refers to a conceptual structure already present in the conceptual base of the verbs it combines with. Thus, the prefix and the base verb are semantically compatible. The spatial component—the "location" of the verbal action on a surface—is frequently over-

tly expressed in constructions with these verbs; for example, *na papiru* 'on the paper', *na bundevi* 'on the pumpkin' in (15):

- (15) Bolje ga je *nacrtati na papiru*, nego direktno *na bundevi*. . . (G)
'It is better to draw it on the paper than directly on the pumpkin.'

In combinations of verbs such as *crtati* with *na-*, a certain "reinforcement" of the base verbs' meaning takes place. That reinforcement can also be perceived as a semantic redundancy. Hampe (2002: 247–248) claims that English verbal particles contribute to end-point profiling and give the resultant state cognitive prominence. The same can be applied to *na-* in goal-attainment contexts: *na-* profiles the image-schematic structure of the base verb, including the goal of the verbal action. Hampe (2002) terms a similar phenomenon arising in combinations of English verbs with certain particles "conceptual overlap": this is exactly what happens in combinations of *na-* with verbs whose base form encode actions necessarily linked to surfaces (e.g., actions happening on surfaces).

Subtype (B) refers to processes that affect surfaces. As a result of these processes and because of the substance being applied, the appearance of the affected surfaces (e.g., their color) is changed. All the verbs within this type additionally express goal attainment.

Hence, both subtypes (A) and (B) relate to a processes or actions that either yield results visible on surfaces or affect surfaces. The choice of the prefix unambiguously relates to the surface image schema that is central to the preposition and the prefix *na(-)* in part of their spatial contexts.

Via analogy, the frequent verbs within these subtypes affect some other base verbs whose image-schematic structure does not contain surface-contact conceptual structure. Another process influencing the combinability of *na-* and some other verbs is metaphorical extension in which becoming visible on a surface transforms into leading to a result and attaining a goal (e.g., *učiti – naučiti* 'learn'): the results are visible, and thus measurable, comparable, and so on. Accordingly, in the goal-attainment group, *na-* either contributes its core spatial meaning that becomes "invisible" because of the conceptual overlap of the base verbs' meanings and *na-* (recall the Overlap Hypothesis), or the spatial meaning of *na-* gives rise to various meaning extensions.

Many *na-*verbs can belong to different semantic subgroups: for example, *naslagati* 'pile up' (which can be seen as a lexicalization of the base verb and the preposition *na* in the prepositional phrase *slagati na* 'pile onto') refers to a vertical arrangement of objects on a horizontal surface. However, *na-* in *naslagati* also implies quantificational meaning (see Section 4). At the same time, *na-* perfectivizes the imperfective *slagati*. This indicates close relations and blending of different meanings of *na-* (see Section 5).

Verbs of the type *naslagati* also illustrate another image schema of *na-* linked to the surface-contact schema: the vertical-ascent schema. Putting objects onto a surface results in a vertical ascent of located objects: no matter their size, these objects' position is higher than the surface they are located on. Thus, in many contexts in which it semantically corresponds to the English

particle *up*, the prefix *na-* refers to an increase in the vertical level. The vertical–ascent schema of *na-* is observable with some other *na-*verbs discussed in Section 2; for example, *naćuliti* ‘prick up (ears)’ and *nadoći, nabujati* ‘rise, be up’, in which *na-* additionally encodes movement and goal attainment. Vertical ascent is also observable with verbs relating to quantity (e.g., *nagomilati* ‘pile up’; see Section 4).

Some verbs refer to filling a container up to its upper edge (e.g., *nasuti, napuniti, naliti* ‘fill up’). These base verbs profile placing a substance or objects into a container. *Na-* with similar verbs focuses on the last layer put on top of other layers or entities that are already in the container and indicates an increase in the vertical level in relation to some previous state. *Na-* relates to the notion ‘on top of’, highlighting the completion of filling; that is, indicating that the containers are completely filled.

With verbs expressing goal attainment, the surface–contact and vertical–ascent meanings blend with other meanings; that is, perfectivity. The impression of *na-* as a “pure perfectivizer” is explainable because the respective verbs refer to completion of processes referred to by imperfective simplex verbs. However, *na-* nonetheless contributes its core spatial semantics, which seem obscure because of the semantic overlap of the base verb’s and prefix’s meaning (e.g., in the *na-*verbs of creation, such as *napisati*). The reason why these verbs combine with *na-* to form “natural perfectives” (Janda 2007) is a similarity of the semantic profiles of *na-* and the base verbs. Because the spatial basis of *na-* is quite apparent in many verbs that it combines with in this group, I find the Overlap Hypothesis more convincing than the Empty Prefix Hypothesis (see Janda & Lyashevskaya 2011).

4. Quantification: Small, sufficient, large quantity, and saturation

In some verbs, *na-* carries quantificational meaning³⁰ either alone or in combination with the reflexive *se*. For instance, this meaning of *na-* is present in the “accumulative” use of this prefix, which is common to the Slavic languages (see Filip 2000, 2005 on the accumulative use of *na-* in Czech and Russian) and in Geniušiene’s (1987: 22) “reflexives with complex formatives” that encompass, among other things, Slavic examples with *na-* and *se*, such as Czech *napit se* ‘drink enough to slake one’s thirst’, and Polish *nasłuchać se* ‘hear (more than) enough’.

In this section, I look at the various facets of quantification with the Croatian *na-*verbs, how different subtypes relate to each other, and how the spatial profile of *na-* already discussed relates to this meaning. Interestingly, individual verbs carrying quantificational meaning can have slightly different to even opposite senses: some *na-*verbs relate to a small quantity (e.g., *nagristi*, literally ‘onto–bite’; ‘bite a little’), and some to a large quantity (e.g., *nagomilati*, literally ‘onto–pile’; ‘pile up’). There are also verbs that in some contexts

30 Quantification in this context refers to the assignment of a certain quantity to an instance of a thing (Radden & Dirven 2007: 136).

seem to refer to a quantity that is a kind of norm, meaning 'enough' (*najesti se*, literally 'onto-eat-self'; 'eat enough').

*Na-*verbs indicating a small quantity are sometimes termed verbs of "partially fulfilled actions" (e.g., Klajn 2002: 258). In Anić, I identified the following verbs belonging to this type: *načeti* 'make a dent in; scratch the surface of', *nadignuti* 'raise a little', *nagorjeti* 'get a little burned', *nagristi* 'leave half bitten', *nakisnuti* 'get slightly sour/wet', *nakrenuti* 'incline', *naprsnuti* 'crack', *napuknuti* 'crack', and *natuknuti* 'hint at'. *Na-* is attached to some perfective *-nu-* verbs (*dignuti* 'raise', *prsnuti* 'break', *puknuti* 'burst'), and to some imperfective verbs (*gorjeti* 'burn', *gristi* 'bite', *kisnuti* 'get wet'). *Na-* added to the perfectives of the type *dignuti* modifies the meaning of the verbs from 'V entirely' to 'V to a small degree' (the fact that *-nu-* expresses semelfactiveness may also be important). *Na-* modifies verbs' meanings indicating that the changes verbs refer to take place on the surface only, which transforms into a reference to a small degree.

Verbs primarily referring to change of posture and caused motion (e.g., *nakriviti (se)* 'tilt', *nagnuti (se)* 'incline', *nakositi (se)* 'tilt, lean') also bear quantificational meaning referring to a (small(er)) degree. This is visible in comparison of *na-* and other prefixes in combination with the same base verbs (e.g., *ukositi* 'set awry' vs. *nakositi* 'set awry a little'). *Nakositi (se)* and *nakriviti (se)* are lexicalizations of the prepositional phrases *na koso*, *na krivo* 'in the wrong direction' and can be motivated by the target image schema.

Sufficient quantity—that is, the meaning 'enough'—is conveyed by a few reflexive verbs; for example, the consumption verbs *najesti se* 'eat enough; eat one's fill', *naručati se* 'finish lunch, lunch one's fill', and *navečerati se* 'finish/have an ample supper'. It is sometimes impossible to differentiate between the meanings of sufficient and large quantity with these verbs without considering the constructions in which they occur. In some contexts, the same verb can refer to a sufficient quantity, and in some other contexts to a large quantity (e.g., *najesti se* 'eat enough; eat one's fill').

Much more verbs from Anić (around sixty) refer to a large quantity than to a small and "norm-like" quantity. A closer examination of verbs referring to a large quantity has shown that it is useful to differentiate between a few subgroups and to carefully analyze the semantics of the base verbs. Some imperfectives such as *čičkati* 'fill, stuff', *drobiti* 'crumble, crush', *gomilati* 'pile up', *pljačkati* 'rob', and *trabunjati* 'ramble, talk nonsense' select *na-* to form prefixed perfectives, and the resulting verbs *načičkati*, *nadrobiti*, *nagomilati*, *napljačkati*, and *natrabunjati* seem to refer to a large quantity. However, a closer examination of the meaning of the base verbs shows that they already imply a considerable or large quantity. For example, *drobiti* implies an action of grinding performed by an agent exerting force on an object, in order to separate it into numerous smaller parts. Thus, a large resulting quantity is already implied in the simplex verb. The same applies to, for instance, *gomilati* 'pile up', the desubstantival verb derived from the noun *gomila* 'pile': the noun already refers to a large number of objects located on top of or very close to each other. Thus, in similar cases, the semantic contribution of *na-*

in terms of encoding large quantity has to be relativized. However, precisely the verbs encoding a large quantity in their base form, verbs that often imply vertical ascent, can explain the emergence of the “accumulative” meaning of *na-*. *Na-* combines with these verbs because they refer to accumulating on a surface; that is, the notion of a surface and vertical ascent is already contained in the image–schematic representation of the base verbs. Hence, the semantic features of *na-* and the base verb overlap. *Na-* shares its central meaning with these verbs, which produces an effect of semantic redundancy (recall the Overlap Hypothesis; see Section 1). This is also observable with other groups of *na-*verbs; see Section 3.

A limited number of a specific type of quantity–related *na-*verbs that Geniušiene (1987: 22) terms “reflexives with complex formatives”³¹ can be found in Anić (e.g., *naslušati se* ‘hear enough of, get tired of listening/hearing’). *Na-* in combination with *se* is very productive in this meaning. Base verbs that can form *na-V se* constructions are semantically heterogeneous. Verbs whose base form do not imply quantity—for example, motion verbs—combine with *na-* and *se*. Stative verbs such as *spavati* form this construction type as well (e.g., *naspavati se*, literally ‘onto–sleep self’; ‘sleep one’s fill’). At first glance, it seems that all verbs can form such constructions. However, some restrictions of a formal and semantic nature do exist, as discussed below. Saturative *na-V se* constructions can be exemplified by (16) containing a motion verb:

- (16) Letio je golub iznad Bašćaršije, *naletio se* sit. (G)
 ‘The pigeon flew above Bašćaršija, and he had enough of flying.’

Motion verbs regularly occur in *na-V se* constructions. The reflexive marker is obligatory because *na-* alone in these verbs encodes spatial meaning (e.g., *naletjeti* ‘fly onto; bump into’), and *se* alone does not combine with them (**letjeti se*). Motion verbs that do not combine with *na-* in their self–motion sense (**nahodati na x* ‘go onto’) readily form saturative constructions (e.g., *nahodati se* ‘walk one’s fill’). All motion verbs can form *na-V se* constructions, but only a few combine with *na-* expressing spatial relations; that is, surface contact. Thus, potentially homonymous constructions are rare. Only imperfectives allow for *na-V se* constructions: for example, the perfective *skočiti* ‘jump’ does not allow for it, whereas the imperfective *skakati* ‘jump’ does (*naskakati se* ‘jump one’s fill’). I consider both elements, *na-* and *se*, as parts of a single construction. Both elements together with the imperfective aspect of the base verb are responsible for the saturative meaning.

Some *na-*verbs (excluding motion verbs) that can be used with or without the reflexive *se* (e.g., communication verbs *napričati* ‘tell a lot’ vs. *napričati se* ‘have a long talk’), also semantically belong to this group. The two forms appear in somewhat different construction types: *napričati* in transitive constructions (typically with direct objects accompanied by lexical quantificational

31 Kiefer (2010: 133) terms these verbs, which he relates to German influence, “saturative aktionsart.”

means; e.g., *toliko gluposti* 'a lot of nonsense' in (17a)). Constructions with *napričati se* do not necessarily contain an object; see (17b):

- (17) (a) *Toliko su gluposti napričali o toj bronhoskopiji.* (HJR)
 'They've said a lot of nonsense about bronchoscopy.'
 (17) (b) *Baš smo se dobro napričali.* (HJR)
 'We had a really nice long talk.'

In the corpora examined, in constructions with similar verbs, additional elements very often indicate quantificational meaning; for example, the expressions *do mile volje* 'to one heart's content', *do sita, siti* 'to one's fill' (see (18)), *dovoljno* 'enough', *dobro* 'good, well', *svašta* 'everything, anything', and *koješta* 'all sorts of things':

- (18) . . . *siti smo se napričali, o svemu i svačemu.* . . (HJR)
 'We had a long talk about all sorts of things.'

In *na-V se* constructions indicating a large quantity, the prefixed verb accompanied by the reflexive *se* can trigger an undergoer in the genitive (e.g., *tjestenine i graha* 'beans and noodles' in (19a)). The undergoer is not necessarily expressed; see (19b):

- (19) (a) . . . *najeo se tjestenine i graha.* . . (HJR)
 'He sated his hunger with beans and noodles.'
 (19) (b) *Strašno sam se najeo.* . . (HJR)
 'I have eaten my fill.'

The construction types in which *na-V se* appears are dependent on the semantic and syntactic properties of the base verbs. Whereas the genitive nominal in (19a) becomes the direct object in constructions with the base verb (*jesti tjesteninu i grah* 'eat beans and noodles'), *napričati se* occurs either with a locative phrase (the locative nominal is a topic of thoughts with base verbs (see (18)), or an instrumental (sociative meaning), as in (20):

- (20) . . . *Dušanović se napričao s redakcijom.* . . (G)
 'Dušanović had a long talk with the editorial board.'

The *na-V se* construction implies 'to one's heart's content', 'V one's fill', and 'exhaust/tire oneself with doing V'; that is, getting oneself into a state of having done enough / a lot or too much of whatever the verbs refer to. It implies various degrees of satiation, ranging from partial to total. The construction can carry positive or negative connotations (e.g., getting a good, satisfying amount of something or getting sick of / tired of / fed up with something). The meaning of a sufficient or large quantity or degree—'enough', 'too much', 'far too much'—is either related to some standard "objective" value, or to a value dependent on subjective factors, and/or contextually determined.

It is not entirely clear what defines the border between partial and total saturation: Novakov's (2007: 304) examples (*napričati* exemplifying partial saturation and *našetati se* 'have a long walk' exemplifying total saturation) indicate that the distinction may relate to the absence or presence of *se*. However,

verbs with and without *se* do not necessarily indicate the difference of partial versus total saturation. The presence and absence of *se* instead contributes to two different construals of a situation: one focusing on the patients, and one focusing on the agents. In the construal with *na-*verbs without *se*—for example, *napričati* (see (17a))—the number of objects being told (stories, facts, etc.) is emphasized; that is, the quantity of objects is in focus: the action results in a large quantity of objects being told. In contrast, *napričati se* does not, at least not primarily, focus on the quantity of objects, but on the agent performing the action and his situation: the action is evaluated as extensive, long, and so on, in relation to the agents performing it. An agent's situation can be evaluated by the agent himself, or by somebody else. In many contexts, the result of an action described in a *na-V se* construction will also be many objects. In addition, individual contexts can also imply the long duration of an event. However, *na-* does not necessarily function as a temporal measure (see Filip, 2005: 137). In *na-V se* constructions, the prefix is indeterminate with regard to measuring the time (the action may or may not take a long time) and the amount of objects. It can, but need not necessarily, provide information about both. However, it certainly does provide information about an agent and his condition; that is, an agent's or somebody else's judgment about the agent's condition. The construction is evaluative: it evaluates the agent's involvement in an activity or his achievement as 'as much as one will,' 'more than enough,' or 'too much' and 'until the uppermost border.' Depending on the verb type, the subject can also be an experiencer that experiences an activity as too much. In construals that *na-V se* constructions yield, the focus is always on the agent or experiencer.

Na-V se constructions seem to be blocked or rarely realized with some verb types. For instance, with *napisati* 'write (down)', *na-* forms what Janda (2007) terms a 'natural perfective,' a perfective verb in which the meaning of the prefix and the base verb coincide. The semantic overlap of the two creates the illusion of *na-* as an empty prefix. Creation verbs (e.g., *pisati*, *crtati*) form natural perfectives with *na-* (see Section 3): this verb type rarely occurs in saturative *se*-constructions (e.g., *napisati se pisama* 'exhaust oneself with writing letters'). *Nacrtati se* would normally be understood as 'draw oneself', and not 'draw a lot / too much'. When a *na-*verb functions as a natural perfective of a base verb, a semantic "clash" with another *na-* meaning is possible, and the verb does not occur in quantificational *se*-constructions in most cases. If a verb does not combine with *na-* to derive a natural perfective or to express other meanings related to surface contact and target notions, it can be employed in a saturative *na-V se* construction. Thus, *na-V se* constructions can be realized, for instance, with creation verbs that do not take *na-* to form natural perfectives (e.g., *graditi* 'build', natural perfective *sagraditi* 'build', saturative construction *nagraditi se (kuća)* 'have enough of building houses').³²

32 *Na-* can stack on other prefixes in *na-V se* constructions; for example, *naprepisivati se* 'crib, copy too much'.

In addition to a desired or large quantity, *na-* in *na-V se* constructions also contributes the result state.

Among the frequent semantic groups of verbs readily deriving saturative constructions in addition to the aforementioned motion and consumption verbs are posture verbs (e.g., *nasjediti se* 'have enough of sitting', *naležati se* 'lie to one's heart content'), communication verbs (e.g., *napričati se* 'have a nice long talk', *navikati se* 'shout/yell one's fill'), physical-activity verbs (e.g., *naraditi se* 'work one's fill'), and emotion verbs and verbs of mental or bodily state (e.g., *napatiti se* 'have one's share of suffering', *nauživati se* 'enjoy to one's heart's content', *naodmarati se* 'rest to one's heart's content'). Some of these verbs already have *se* in their base form (e.g., *odmarati se* 'rest').³³

How does the quantificational meaning relate to other meanings of *na-*, and how are different quantificational meanings linked to each other? I believe that the quantificational meanings relate to the spatial profile of *na-*; that is, the surface image schema of *na*, as well as to the related vertical-ascent schema. The spatial particle *na(-)* is linked to a spatial relation in which a static trajector is located on a surface, or a surface-like object, or a relation in which a moving trajector aims at reaching a surface(-like) object. The inferences related to verbal situations in which the meanings 'on a surface' / 'affecting a surface' emerge are: not deeply (affected), (affect) a little, (affect/happen) to a small degree. These inferences trigger a predictable meaning extension; that is, the slightly-affecting-a-surface meaning in verbs such as *nagorjeti* 'be/get a little burned'.³⁴ How does this meaning relate to the accumulation-on-a-surface meaning? I relate it to two processes, assuming that they may be at work at the same time. The first process is an extension via antonymy from the slightly-affecting-a-surface meaning to the meaning of great degree, satiation, and intensity (*nagorjeti* 'get a little burned' – *nabacati* 'throw on a heap, heap up' – *najesti se* 'eat one's fill', etc.). Accordingly, the slightly-affecting-a-surface meaning transforms into a partially realized activity, and the extension via antonymy³⁵ transforms this meaning into the meaning of partial and total saturation. The premises for the second process are again the surface-contact

33 This construction is, however, blocked with some verbs of mental/emotional state; for example, verbs of wishing and hoping (*nadati se* 'hope', *željeti* 'want').

34 This meaning is also realized in some adjectives prefixed with *na-*; for example, *nagluh* 'somewhat deaf'.

35 Antonymy as a conceptual relation structures not only lexical relations, but also relations between grammatical categories (e.g., cases; Janda (1993) shows how extension via antonymy shapes the semantic network of the dative in Slavic). Just as single lexemes occasionally unify opposite meanings into one form (e.g., *stati* in certain constructions means 'stop', and in some other 'start'), so do affixes (e.g., Croatian *u-* meaning simultaneously 'in(to)' and 'away'). In addition, individual case constructions unify opposite meanings: the spatial prepositionless dative in Croatian with certain verbs (e.g., *uteći* 'run away') simultaneously expresses "move to/towards" and "move from". (Dąbrowska's (1997) concept of "personal sphere" can also explain the two opposite meanings coded by the dative with the verb *uteći*: in the "move towards" scenario the personal sphere of the dative referent receives an element, and in the "move from" scenario it loses an element.

To better understand the predictability of antonymic extensions, much more research is needed.

image schema with its very important inference–visibility for an observer of objects placed on a surface—and the existence of base verbs that reinforce the accumulation–on–a surface and vertical–ascent meaning. These verbs are verbs whose base forms already imply accumulating, piling up, collecting, or loading numerous objects; for instance, *gomilati* ‘pile/heap up’, *trpati* ‘cram/stuff (into)’, and *kupiti* ‘collect’. Similar base verbs imply a large quantity and/or great degree, and their image–schematic representation overlaps with the representation of *na-* because *na-* relates to the notion of visibility on a surface and thus to vertical ascent of objects placed on a surface. Objects collected on a surface are clearly visible, and their visibility and vertical ascent give rise to the accumulation notion. To put it the other way around, objects collected in a container, behind or under other objects, are less visible or invisible, which makes other image schemas (e.g., containment) less applicable to expressing accumulation, at least in Slavic. Because of the semantic overlap between base verbs referring to a large quantity or degree and *na-*, these verbs could have reinforced analogical derivations of other verbs related to quantification.

To sum up, the meaning of a small quantity is due to a transformation of the surface image schema, whereas a large quantity seems to have two motivations: on the one hand, a large quantity is motivated by the vertical–ascent image schema (i.e., the metaphor MORE IS UP, see Lakoff & Johnson (1980: 15–16), which is inherent in the meaning of some base verbs and is closely linked to the surface schema of *na-*. On the other hand, an antonymic extension links the meaning of small and the meaning of a large quantity.

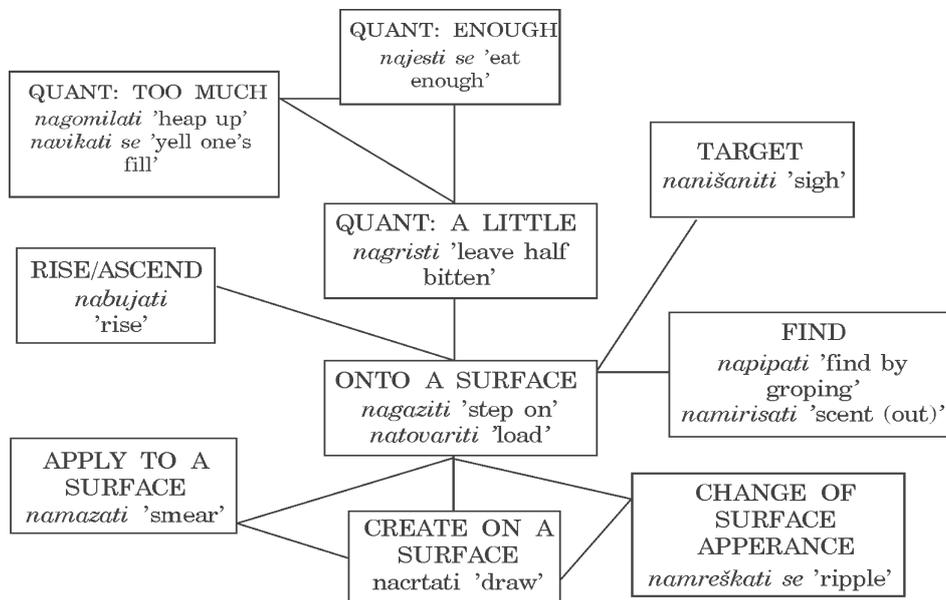
5. *Na-*: a coherent network of related meanings? Concluding remarks

The preceding sections discussed several groups of *na-*verbs related to the following semantic features:

- A: motion (self–motion, caused motion, fictive motion, etc.) onto a surface or towards a goal/target;
- B: changes on surfaces caused by volitional or non–volitional motion;
- C: goal attainment, perfectivity, telicity;
- D: quantification (small – norm – large quantity).

The first two features relate to concrete or abstract motion, and to the surface–contact (motion on or onto a surface) or target–goal meaning of *na-*. These meanings are also observable in the prepositional uses of *na-*. The last two features also relate to the surface–contact image schema and the inferences it produces (e.g., vertical ascent of objects placed on surfaces). It seems that all the groups of verbs discussed can be metaphorically linked to the spatial schemas of *na-*.

Figure 1 presents a semantic network of *na-*verbs discussed in the previous sections. It shows how various meanings of *na-*verbs relate to the core spatial meaning of this prefix. The darker shape with heavier lines in the middle represents the prototype. The solid lines connect the prototype and individual subcategories, as well as individual subcategories, indicating their direct meaning relations and extensions.

Figure 1: Meaning network of *na-*

In the verb inventory examined, a considerable overlap between the semantic subgroups of *na-*verbs has been observed. In many cases, verbs belong to more than one category: for example, *naštancati* 'press; churn out' refers to the resulting state and goal attainment. It relates to visibility on a surface, vertical ascent, and it can also imply 'to a great degree.' Another example of a link between different groups of *na-*verbs is the vertical-ascent image schema that is observable with some motion verbs (e.g., *nadoći*, *nabujati* 'rise, be up', *naćuliti* 'prick up (ears)'), but also with verbs indicating accumulation on a surface (e.g., *nagomilati*, *naslagati* 'pile up') and quantification (e.g., *nahodati se* 'walk too much'). The apparent semantic overlap between the different subgroups of verbs and blending of different senses in one and the same verb confirms the assumption that *na-* constitutes a network of closely related meanings, and shows advantages of a network approach to prefixal meanings.

Although the spatial profile of the prefix *na-* in self-motion verbs does not seem strong (almost all self-motion verbs have developed extended meanings that prevail in usage examples), the spatial profile of *na-* (i.e., its surface-contact meaning) relates to and influences the emergence of other meanings. The surface-image schema is decisive for *na(-)* as a preposition and prefix. A large group of *na-*verbs refers to various activities "located" or taking place on surfaces, or activities necessarily implying contact with surfaces or utilizing surfaces. The spatial surface meaning experiences various metaphorical extensions. For example, the meaning of a small quantity (e.g., *nagristi* 'bite/eat away a bit') arises via a metaphorical extension from the spatial surface-contact meaning. Via an extension of the surface-contact meaning, an action taking

place on a surface is transformed into an action that is only partially fulfilled. The same extension implies that an object with an outer and inner space is only partially affected. Prefixed verbs such as *nagristi* can be paraphrased with prepositional constructions containing *na*: *gristi na površini* 'bite on a surface'. These prepositional constructions show that the action takes place on a surface and/or affects a surface. The concrete spatial meaning 'be located / take place on a surface' extends to 'a little' in examples such as *nagorjeti* 'be/become a little burned'. Thus, via the notion 'take place on the surface / affect (only) a surface', similar verbs establish a meaning relation with motion verbs in which *na-* has an apparent spatial profile.

In verbs in which *na-* relates to a significant or large quantity, spatial meaning is also relevant; for instance, in *nagomilati* 'accumulate, pile/heap up'. The base noun *gomila* 'pile' already implies a large quantity, as does the unprefixated verb. My assumption is that base verbs showing a great semantic compatibility with the prefix *na-* (e.g., *gomilati* 'accumulate') are the core members of the sub-category of *na-*verbs referring to a large quantity. In these verbs, *na-* reinforces the meaning of the base verb, as do English particles combined with some verbs (Hampe 2002). Verbs such as *nagomilati* influence the emergence of other verbs referring to a significant amount or degree, such as *nahvatati* 'catch a lot of' and *nahvatati se* 'catch one's fill'. Moreover, verbs such as *nagomilati* imply vertical ascent, which is also crucial for motivating the meaning of *na-*verbs indicating large quantity and satiation.

In numerous *na-*verbs, *na-* is traditionally assumed to have a perfectivizing function only; that is, to be more or less empty. My analysis has provided proof against such an opinion. *Na-* added to an imperfective verb as a rule³⁶ perfectivizes it, and so the perfectivizing function of *na-* is observable in all the semantic groups, but it seems to be a dominant function with some verbs. Examples in which *na-* is allegedly empty include, for instance, *naučiti* 'learn', *naoštriti* 'sharpen', *napuniti* 'fill (up)', *nakinđuriti se* 'dress up tastelessly', and *našminkati se* 'put on makeup'. These verbs do not allow secondary imperfectivization (see also the examples discussed in Section 3). Among these verbs, some examples are core members that may have influenced other peripheral members and strengthened the *na-* pattern. The central members of this sub-category are verbs with a more or less apparent spatial profile, and whose image-schematic representation includes a surface: with *našminkati* for instance, the surface is a face to which makeup is applied. The two meanings-action performed on a surface and the completion of an action-blend in similar cases. However, the surface image schema is backgrounded and less apparent. With *naučiti*, the prefix encodes the entirety of the situation; that is, the situation viewed inside its endpoints (which is the core meaning of the perfective aspect). The prefix also adds telicity to the situation: it sets a boundary—that is, a goal-implying that it has been reached.

³⁶ An exception is *nasipati* 'spread over; strew down'; *sipati* remains imperfective in spite of prefixation. The perfective stem is **suti* (*nasuti*).

With verbs apparently related to spatial images, and verbs expressing quantification (accumulation and saturation), *na-* also indicates the inclusion of endpoints and goal attainment; that is, telicity. In the cases in which *na-* seems empty, I argued that there are significant semantic correspondences between *na-* and base verbs that create the illusion of an empty prefix. Some traces of the initial spatial meaning of *na-* can be seen in many verbs in which *na-* seems to be a “pure perfectivizer.” With base verbs in which the spatial motivation seems less apparent or rather blurred, such as with some goal–attainment verbs, *na-* is motivated by a metaphorical link: the spatial movement onto transforms into a metaphorical movement from an initial (source) to a resultant (goal) state. Accordingly, spatial motivation—that is, a surface–image schema—underlies even *na-*verbs in which the semantic link of *na-* and the base verb seems less apparent.³⁷ This speaks against the Empty Prefix Hypothesis, and supports the Conceptual Overlap Hypothesis. Having in mind Shull’s (2003) assumptions about a different nature of prefixes’ spatial and abstract uses, and relating these assumptions to the verbal prefix *na-* in Croatian, I claim and hope to have shown that metaphorical extensions and abstractions of the prefix’s spatial profile are traceable in most *na-*verbs, and that a clear distinction between spatial and abstract meanings cannot easily be drawn. My examination of *na-*verbs has shown that the distinction between concrete (spatial) and abstract meanings is highly relative. Apparent relations of spatial and abstract meanings can be traced in many *na-*verbs. In some cases, these relations are less visible, but nevertheless exist: abstract meanings are a result of metaphorical extensions of spatial meanings.

References

- Anić, Vladimir (1998). *Rječnik hrvatskoga jezika*. (3. izd.). Zagreb: Novi Liber.
- Babić, Stjepan (1986). *Tvorba riječi u hrvatskom književnom jeziku: nacrt za gramatiku*. (1. izd.). (Djela Jugoslavenske akademije znanosti i umjetnosti). Zagreb: JAZU, Globus.
- Barlow, Michael and Suzanne Kemmer (2000). *Introduction*. Barlow, Michael, Suzanne Kemmer eds. *Usage-based models of language*. (CSLI publications). Stanford: Center for the Study of Language and Information Press, vii–1.
- Belaj, Branimir (2008). *Jezik, prostor i konceptualizacija: Shematična značenja hrvatskih glagolskih prefiksa*. Osijek: Sveučilište Josipa Jurja Strossmayera, Filozofski fakultet.
- Bertinetto, Pier Marco, Denis Delfitto (2000). Aspect vs. actionality: Why they should be kept apart. Dahl, Östen, eds. *Tense and aspect in the languages of Europe*. (Empirical approaches to language typology). Berlin – New York: Mouton de Gruyter, 189–225.
- Dąbrowska, Ewa (1997). *Cognitive semantics and the Polish dative*. (Cognitive linguistics research). Berlin – New York: Mouton de Gruyter.
- Dickey, Stephen M. (2012). Orphan prefixes and the grammaticalization of aspect in South Slavic. *Jezikoslovlje* 13.1: 71–105.
- Filip, Hana (2000). The quantization puzzle. Pustejovsky, James, Carol Tenny, eds. *Events as grammatical objects: The converging perspectives of lexical semantics, and syntax*. (CSLI lecture notes). Stanford: Center for the Study of Language and Information Press, 3–60.

37 For example, *napasti* ‘attack’ literally means ‘onto–fall’, and falling onto corresponds to a vivid spatial image of a physical attack. *Na-* in *nastati* ‘appear’ also straightforwardly relates to the surface–image schema: coming into existence equals visibility on a surface.

- Filip, Hana (2005). On accumulating and having it all: Perfectivity, prefixes and bare arguments. Verkuyt, Henk J., Henriëtte de Swart, Angeliek van Hout, eds. *Perspectives on aspect*. Dordrecht: Kluwer, 125–148.
- Filipović, Luna (2007). *Talking about motion: A crosslinguistic investigation of lexicalization patterns*. (Studies in language companion series). Amsterdam: John Benjamins.
- Gallant, Charles James III (1977). *Russian verbal prefixation and semantic features: An analysis of the prefix vz-*. Doctoral dissertation. Los Angeles: University of California.
- Geniušienė, Emma (1987). *The typology of reflexives*. (Empirical approaches to language typology). Berlin – New York – Amsterdam: Mouton de Gruyter.
- Grickat, Irena (1966–67). Prefiksacija kao sredstvo gramatičke (čiste) perfektizacije. *Južnoslovenski filolog* 27.1–2: 185–223.
- Hampe, Beate (2002). *Superlative verbs: A corpus-based study of semantic redundancy in English verb-particle constructions*. (Language in performance). Tübingen: Gunter Narr Verlag.
- Isačenko, Aleksandr V. (1960). *Grammatičeskij stroj russkogo jazyka v sopostavlenii s slovačkim: čast' vtoraja: morfologija*. Bratislava: Izdatel'stvo Slovenskoj akademii nauk.
- Janda, Laura A. (1986). *A semantic analysis of the Russian verbal prefixes: Za-, pere-, do-, and ot-*. Munich: Otto Sagner.
- Janda, Laura A. (1993). The shape of the indirect object in Central and Eastern Europe. *Slavic and East European Journal* 37.4: 533–63. DOI:10.2307/308461
- Janda, Laura A. (2007). Aspectual clusters of Russian verbs. *Studies in Language* 31.3: 607–648. DOI: 10.1075/sl.31.3.04jan
- Janda, Laura A., Tore Nessel (2010). Taking apart Russian *raz-*. *Slavic and East European Journal* 54.3: 476–501.
- Janda, Laura A., Olga N. Lyashevskaya (2011). Prefix variation as a challenge to Russian aspectual pairs: Are *zavjaznut'* and *uvjaznut'* 'get stuck' the same or different? *Russian Linguistics* 35.2: 147–167. DOI: 10.1007/s11185-011-9076-9
- Johnson, Mark (1987). *The body in the mind: The bodily basis of meaning, imagination, and reason*. Chicago: University of Chicago Press.
- Kempchinsky, Paula Marie, Roumyana Slabakova, eds. (2005). *Aspectual inquiries*. Dordrecht: Springer.
- Kiefer, Ferenc (2010). Areal-typological aspects of word-formation: The case of aktionsart-formation in German, Hungarian, Slavic, Baltic, Romani and Yiddish. Rainer, Franz, Wolfgang Ulrich Dressler, Dieter Kastovsky, Hans Christian Luschützky, eds. *Variation and change in morphology*. (Amsterdam studies in the theory and history of linguistic science, Series IV, Current issues in linguistic theory). Amsterdam: John Benjamins, 129–148.
- Klajn, Ivan (2002). *Tvorba reči u savremenom srpskom jeziku. Prvi deo: slaganje i prefiksacija*. Belgrade: Zavod za udžbenike i nastavna sredstva.
- Klikovac, Duška (2006). *Semantika predloga. Studija iz kognitivne lingvistike*. Belgrade: Filološki fakultet.
- Kustova, Galina I., Olga N. Lashevskaja, Elena V. Paducheva, Ekaterina V. Rakhilina (2009). Verb taxonomy: From theoretical lexical semantics to practice of corpus tagging. Lewandowska-Tomaszczyk, Barbara, Katarzyna Dziwirek, eds. *Studies in cognitive corpus linguistics*. (Łódź studies in language). Frankfurt: Peter Lang, 41–56.
- Lakoff, George, Mark Johnson (1980). *Metaphors we live by*. Chicago: University of Chicago Press.
- Langacker, Ronald W. (2008). *Cognitive grammar: A basic introduction*. New York: Oxford University Press.
- LeBlanc, Nicholas Lance (2010). *The polysemy of an "empty" prefix: A corpus-based cognitive semantic analysis of the Russian verbal prefix po-*. PhD dissertation. Chapel Hill: University of North Carolina.
- Manova, Stela (2007). On derivation-inflection character of Bulgarian aspect. *Die Welt der Slaven* 52: 21–46.

- Nesset, Tore (2010). Is the choice of prefix arbitrary? Aspectual prefixation and Russian verbs of perception. *Slavic and East European Journal* 54.4: 666–689.
- Novakov, Predrag (2007). Telicity in English and Serbian. *British and American Studies* 13: 299–307.
- Oakley, Todd (2007). Image schemas. Geeraerts, Dick, Hubert Cuyckens eds. *The Oxford handbook of cognitive linguistics*. New York: Oxford University Press, 214–235.
- Przybylska, Renata (2006). *Schematy wyobrażeniowe a semantyka polskich prefiksów czasownikowych do-, od-, prze-, roz-, u-*. Kraków: Universitas.
- Radden, Günter, René Dirven (2007). *Cognitive English grammar*. (Cognitive linguistics in practice). Amsterdam – Philadelphia: John Benjamins.
- Rodriguez, M. Andrea, Max J. Egenhofer (1997). Image–schemata–based spatial inferences: The container–surface algebra. Goos, Gerhard, Juris Hartmanis, Jan van Leeuwen, eds. *Lecture notes in computer science*. Berlin: Springer, 35–52.
- Šarić, Ljiljana (2003). Prepositional categories and prototypes: Contrasting some Russian, Slovenian, Croatian, and Polish examples. *Jezikoslovlje* 4.2: 187–204.
- Šarić, Ljiljana (2006). A preliminary semantic analysis of the Croatian preposition *u* and its Slavic equivalents. *Jezikoslovlje* 7.1–2:1–43.
- Šarić, Ljiljana (2008). *Spatial concepts in Slavic: A cognitive linguistic study of prepositions and cases*. (Slavistische Studienbücher, Neue Folge). Wiesbaden: Otto Harrassowitz Verlag.
- Schooneveld, Cornelis Hendrik van (1958). The so-called 'préverbes vides' and neutralization. *Dutch contributions to the Fourth International Congress of Slavistics*. The Hague: Mouton de Gruyter, 159–161.
- Shull, Sarah (2003). *The experience of space: The privileged role of spatial prefixation in Czech and Russian*. (Slavistische Beiträge). Munich: Otto Sagner.
- Stošić, Dejan (2007). The semantics of space: A study of the prefix *pro-* in Serbian. Delbecque, Nicole, Bert Cornillie, eds. *On interpreting construction schemas: From action and motion to transitivity and causality*. (Trends in linguistics. Studies and monographs). Berlin: Mouton de Gruyter, 331–357.
- Švedova, Natal'ja Ju., Vjačeslav N. Belousov, Vladimir N. Lopatin (1980). *Russkaja grammatika*. (2 sveska). Moscow: Nauka.
- Tabakowska, Elżbieta (2003). Space and time in Polish: The preposition *za* and the verbal prefix *za-*. Cuyckens, Hubert, Thomas Berg, René Dirven, Klaus-Uwe Panther, eds. *Motivation in language: Studies in honor of Günter Radden*. (Amsterdam studies in the theory and history of linguistic science, Series IV, Current issues in linguistic theory). Amsterdam: John Benjamins, 153–179.
- Toops, Gary H. (1998). The scope of "secondary" imperfectivization in Bulgarian, Russian, and upper Sorbian. Maguire, Robert A., Alan Timberlake, eds. *American contributions to the Twelfth International Congress of Slavists: Cracow, August–September 1998: Literature, linguistics, poetics*. Bloomington – Indiana: Slavica, 515–529.
- Tyler, Andrea (2012). *Cognitive linguistics and second language learning: Theoretical basics and experimental evidence*. New York: Routledge.
- Twardzisz, Piotr (1994). The semantics of the Polish verbal prefix *ob(e)-*. A prototype approach. Gussmann, Edmund, Henryk Kardela eds. *Focus on language: Papers from the 2nd Conference of the Polish Association for the Study of English, Kazimierz'93*. Lublin: Maria Curie-Skłodowska University Press, 217–232.
- Vey, Marc (1952). Les préverbes 'vides' en tchéque moderne. *Revue des études slaves* 29: 82–107. DOI: 10.3406/slave.1952.1583
- Zaloznjak, Anna A., Aleksej D. Šmelev (2000). *Vvedenije v russkiju aspektologiju*. Moscow: Jazyki russkoj kultury.

Kognitivnolingvistička analiza glagolskog prefiksa *na-* u hrvatskome

Ova se analiza bavi hrvatskim glagolskim prefiksom *na-* u kognitivnolingvističkom okviru. Na temelju opsežnog inventara suvremenih glagola i primjera iz korpusa, ispituju se semantičke karakteristike svih značenjskih podskupina glagola s prefiksom *na-*. Osnovni je cilj analize pokazati što povezuje pojedinačna značenja prefiksa *na-*, kako se njegova naoko različita značenja preklapaju te na koji su način sva značenja prefiksa *na-* povezana sa središnjom prostornom shemom tog prefiksa. Posebna se pozornost pri tome posvećuje odnosu prostornih značenja sa značenjima za koja se čini da se ne temelje na prostoru, te transformacijama i apstrakcijama prostornog značenja koje se temelje na metafori i analogiji, a koje uvjetuju povezanost svih značenja sa središnjim prostornim značenjem u značenjskoj mreži prefiksa. Analiza se osvrće na dvije hipoteze zastupane u slavističkoj lingvistici: hipotezu o značenjski praznim prefiksima te hipotezu o konceptualnom preklapanju značenja prefiksa i glagola. Analiza glagolskog prefiksa *na-* pruža argumente u korist hipoteze o konceptualnom preklapanju.

Key words: verbal prefixes, conceptual blending, Cognitive Linguistics, Croatian language

Ključne riječi: glagolski prefiksi, konceptualno preklapanje, kognitivna lingvistika, hrvatski jezik