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THE SEMANTICS OF THE PREPOSITION *PO* IN CROATIAN LANGUAGE

This paper examines the semantics of the preposition *po* in the Croatian language within the theoretical framework of cognitive linguistics. The introductory part of the paper gives a short overview of theoretical assumptions and summarises the previous findings on the semantics of this preposition. The shortcomings of the descriptions in contemporary grammars and dictionaries are identified and discussed. In the central part of the paper the semantic network of the preposition *po* is described – its prototypical spatial meaning based on the concepts of MOTION and SURFACE is identified and the ways in which the prototypical spatial meaning is related to other spatial meanings and the meanings in non-spatial domains are elaborated. All interpretations are derived from an extensive investigation into the examples collected from on-line corpora of the Croatian language and research conducted among native speakers.

KEY WORDS: *Croatian language, cognitive linguistics, spatial particles, preposition po, motion on surface, locative case, accusative case*

1. INTRODUCTION

Prepositions are among the most frequent words in languages that possess them. The frequency of prepositions is reciprocal to their semantic complexity, i.e. they confirm Zipf's Principle of Economic Versatility that stipulates a direct correlation between a lexical item's semantic versatility and its frequency of use. In addition, prepositions confirm Zipf's Law of Abbreviation that stipulates an inverse correlation between the frequency and length of linguistic units. This implies that shorter prepositions are semantically more versatile, and this can be confirmed by numerous examples from various languages (examples are easy to find, e.g. in Anić et al. (2004) it can be read that the short Croatian preposition *do* 'next to, (up) to, as far as, till, up to, until' has altogether nine different meanings, while the longer preposition *uslijed* '(due to, because of' has only one) has only one. Examples from other languages confirm the frequency principle stated earlier: the preposition *of* is the second most frequently used word in the English language (Saint-Dizier 2006: 3) and eighteen out of one hundred most frequent

words in German are prepositions (Volk 2006: 84). In the Croatian language three out of ten most frequently used words are prepositions (prepositions *u* 'in, at, by, into, to, on', preposition *na* 'on, upon, by, in, at, into', and preposition *za* 'for, to, in, by, with, during'); among one hundred most frequent words there are fourteen prepositions in total. According to Moguš, Bratanić, and Tadić (1999) the preposition *po* 'about, after, upon, on, along, during, at, by, in' is the fortieth most frequent word in the Croatian language, and its semantics is the topic of this paper. Moguš, Bratanić, and Tadić (1999) do not distinguish between a simple preposition like *na* 'on, upon, by, in, at, into' and complex prepositions like *na sredini* 'in the middle of' – the fact which has to be taken into account when considering the frequency of a preposition in Croatian (the same applies to the usage frequency of the preposition *po* discussed later in this paper). According to Silić and Pranjković (2005), the preposition *po* forms part of the following complex prepositions: *po pitanju* 'regarding, in terms of, on the issue of', *po liniji* 'following the line of', *po mjeri* 'tailored to meet the needs of', *po dužini* 'lengthways', *po sredini* 'on/through the middle of', *po širini* 'widthways' and *sudeći po* 'judging by'.

It is rather surprising that frequency and semantic complexity of prepositions are not reflected adequately by the amount of linguistic literature devoted to their description. It can be said that prepositions have "long been neglected in linguistic inquiry" (Zelinsky-Wibblet 1993), that they "seem to be taken for granted" (Kurzon 2002: 231) and that "discrepancies and inconsistencies have almost become characteristic of [their] description" (Rauh 1993: 99). The "ennoblement of the humble preposition" (Taylor 1993: 151) started in the second half of the last century within Theory of Government and Binding but the generative approach, being oriented on formal descriptions of language, did not pay attention to the meaning of prepositions. A dramatic turn happened with the development of cognitive linguistics, a field that considers meaning to be the foundation of language (as Langacker (1987: 12) puts it: "meaning is what language is all about"). Within cognitive linguistics the exploration and description of prepositional semantics can be described as the most prominent field of research. Unfortunately, the focus of attention is (still) primarily on English or other so-called bigger European languages. Prepositions in Slavic languages, especially prepositions in the South Slavic languages, tend to be of marginal interest to cognitive linguistics researchers and, as a result, there exists a relatively small amount of knowledge on their semantics (especially from the contrastive perspective). In the last several years improvements in this field can be seen, e.g. an international research group lead by professor Ljiljana Šarić is working on the project entitled *Spatial Constructions in South Slavic: Semantics of Prefixes and Cognate Prepositions*. Their research is summarised in a special issue of the journal *Jezikoslovlje* (2012) entitled *A cognitive linguistic view of South Slavic prepositions and prefixes*. Generally speaking, it can be said that, of all South Slavic languages, the most attention within cognitive linguistics is devoted to prepositions in the Croatian language, e.g. the preposition *u* 'in, at, by, into, to, on' (Šarić 2006a; Šarić 2008; Šarić 2003), preposition *na* 'on, upon, by, in, at, into' (Šarić 2003; Šarić 2008), preposition *k* 'toward, to' (Šarić 2008), preposition *pri* 'at, in, on, near' (Šarić 2008; Šarić 2006b), preposition *uz* 'at,

by, along with, close to, beside' (Šarić 2012), preposition *od* 'of, from' (Belaj 2010; Brala-Vukanović and Memišević 2012), preposition *o* 'about, concerning' (Matovac 2013; Brala-Vukanović 2011; Brala-Vukanović 2009), preposition *do* 'next to, (up) to, as far as, till, up to, until' (Matovac 2013; Šarić 2008; Brala-Vukanović and Memišević 2012), preposition *nad* 'over, above' (Matovac 2013; Šarić 2003) and prepositions *po* 'about, after, upon, on, along, during, at, by, in', *s* 'with, along with, together', *iz* 'from, out of, by, through, for, off', *bez* 'without', *pod* 'under, below, beneath', *pred* 'before, in front of, to' and *za* 'for, to, in, by, with, during' (Matovac 2013).

2. PREVIOUS APPROACHES AND THEORETICAL ASSUMPTIONS

Descriptions of the usage of the preposition *po* can be found in the dictionaries and grammar books of the Croatian language. A systematic description of the Croatian preposition *po* within the framework of cognitive linguistics can be found only in Matovac (2013); this paper further develops the insights presented there. More generally speaking, it can be observed that the preposition *po* is generally neglected in the semantic analysis of prepositions in Slavic languages (an exception being the Polish *po* (Bacz 2002; Bacz 1999)). Therefore, this paper contributes to a rather small amount of information on the preposition in question.

Croatian primary preposition *po* (and its cognate verbal prefix *po-*) belongs to the list of Slavic-inherited lexicon in Croatian, i.e. it belongs to the list of common Slavic prepositions. According to Derksen (2008: 407) its etymology can be reconstructed back to PIE form **h₂po* which gave Balto-Slavic form **po(ʔ)*. In modern Baltic languages, the verbal prefix developed from this form has a role of forming the perfective aspect; the same applies to Slavic languages. According to Dickey (2012) the prefix *po-* in Bulgarian is the most extreme example of a verbal prefix losing its semantic connection with the cognate preposition and functioning only as a marker of perfectivity.¹ Dickey (2012) uses the term *orphan prefix* to label such prefixes and highlights the fact that only three Slavic verbal prefixes are to be considered as orphan prefixes, and each only in some Slavic languages (Bulgarian *iz-*, Slovenian *s-/z-* and Bulgarian *po-*). Furthermore, if we follow Derksen (2008: 407), we can see that the meaning of the preposition *po* has developed unevenly when it comes to different branches of the family of Slavic language but that the semantic core is preserved in all modern Slavic languages. According to Derksen (2008: 407) the preposition *po* has the following meanings in different Slavic languages: Russian – 'after, on, by, at, up to', Czech – 'after, on, by, at, up to', Polish – 'after, on, by, at, up to', Slovenian – 'at, on, after, by' and Bulgarian – 'on, over, in, at, to'. When it comes to contemporary Croatian, Derksen (2008: 407) says that the meaning of *po* can be described by the English prepositions 'for, over, though, by, after'. It has to be said that the English language does not have a preposition that can to some extent

¹ Cognitive linguistics rejects this kind of statements and claims that there are no semantically empty verbal prefixes or pure functional prepositions. These claims are derived from cognitive linguistics' major presumption that every linguistic unit is meaningful.

accurately translate the preposition *po*.² In the Croatian – English dictionary by Bujas (1999) more details are presented. The fact that it took two dictionary pages to describe the meaning of the preposition *po* indicates its semantic complexity. Bujas (1999: 1066) divides the meaning of *po* into five sub-meanings: (i) spatial meaning: ‘along, through, over, by, on’, (ii) mediation: ‘through, by, via, per’, (iii) measure, quantity: ‘by, per, at’, (iv) sequence: ‘by, after’, and (v) meaning equivalent to the meaning of preposition *prema*: ‘by, according to, in terms of’.

When it comes to the meaning of the preposition *po* as described in contemporary Croatian grammar books and dictionaries, it is necessary to note that these sources provide diverse and non-unified descriptions – hardly a surprising occurrence since such inconsistencies are symptomatic of describing prepositions in general. These inconsistencies are a product of theoretical and methodological disputes on the nature of meaning (especially on the meaning of so-called functional words that prepositions are counted as). Traditional approaches did not address the question of prepositional polysemy (most often not because grammarians and lexicographers did not want to admit that prepositions are polysemous linguistic units but because the proper tools to deal with this phenomenon were not available); prepositional meanings were treated as manifestations of randomness in language. Taylor (1995: 109) summarizes the traditional approaches’ stance on prepositional meanings: "prepositional usage is idiomatic, and ‘just has to be learnt’". On the other hand, cognitive linguistics puts this issue in the middle of its research interests. Following Taylor (1995: 110), it can be said that "the demonstration that prepositional usage is highly structured has probably been one of the major achievements of the cognitive paradigm".

In general, we can say that there are two major problems when it comes to the meaning of prepositions: (i) how many meanings a given preposition has and (ii) how these meanings are interconnected. Unfortunately, to the present day, only the second of these two questions has been answered fully within the framework of cognitive linguistics.

Cognitive linguistics presumes different meanings of prepositions to be interconnected in a principled manner (by means of different cognitive processes) and that they can be represented as a semantic network organized around a prototypical/primary sense.³ Furthermore, cognitive linguistics defines meaning as conceptualisation of experience, and experience of space is a primary human experience – spatial experience models primary concepts (usually called image

² When it comes to translation into the German language, which also does not have a corresponding primary preposition, etymological dictionary by Skok (1988: 692) says that the meaning of preposition *po* with locative case can be paraphrased as German *überhin i längs* and that the meaning of the preposition *po* with accusative case can be paraphrased as German *nach i an*. Furthermore, the usage of the preposition *po* with dative case is mentioned, the usage was present in the Croatian redaction? of Old Church Slavonic (Vince 2010: 804) and can be found in some modern Slavic languages (e.g. Polish and Russian), and the meaning of which can be paraphrased as German *überhin i längs*.

³ Term prototype, despite its wide usage, is somehow controversial as there is no definite agreement on the question of identification of a prototype. Some researchers, e.g. Tyler and Evans (2003), therefore use the term primary to highlight the fact that the most basic meaning is also diachronically the first meaning and that semantic networks develop over time.

schemes) and these primary concepts serve as building blocks in the formation of more complex concepts. Therefore, cognitive linguistics presupposes that language is conditioned by space and that abstract and metaphorical expressions are essentially grounded in space. Therefore, the notion of space has a special place within the cognitive framework. Bearing this in mind, prepositions are seen as linguistic units that express or profile primarily spatial relations between two objects (following Langacker (1987) terminology, these two objects are usually labelled as a trajectory and landmark). The basic assumption of cognitive linguistics is that systematic account of spatial prepositional meanings helps to explain abstract prepositional meanings i.e. it is assumed that there is a traceable relation of spatial meanings to other non-spatial meanings of prepositions. On the ground of such assumptions, the description of prepositions consists of (i) definition of prototypical/primary meaning (which is spatial and schematic in nature), (ii) identification of non-prototypical meanings, and (iii) description of network of meanings which is based on analysis of relations between them.

The question of a number of meanings present in the semantic network of preposition has not still been adequately answered. Ever since Sandra and Rice (1995) put forward their critique of the semantic network approach and warned about the unconstrained methodology present in descriptions of prepositions within cognitive linguistics there has been a question mark hanging over every semantic analysis of prepositions. How many meanings does a preposition have? Are meanings identified within a semantic network of preposition constructs developed solely for the purpose of the elegance of the description or are they cognitively real? How to decide whether one meaning is just a result of the contextual interpretation and not the meaning stored separately in the mental lexicon as an individual point in the semantic network? As an example, Lakoff (1987), following what was first presented by Brugman (1981), says that English preposition *over* has several dozen different meanings while Tyler and Evans (2003)⁴ say that it has fifteen different

⁴ Tyler and Evans (2003), within their model of *principled polysemy*, propose tools for proper identification of the primary sense and separate senses of a preposition. Prototypical or primary sense is the one that is the basis out of which all other senses are derived. It can be identified on grounds of empirical and linguistic criteria. The linguistic pieces of evidence include the following criteria: (i) earliest attested meaning, (ii) pre-dominance in the semantic network, (iii) use in composite forms, (4) relations to other spatial particles, and (5) grammatical predictions. When it comes to identification of number of senses in the semantic network of a preposition, Tyler and Evans (2003: 42-43) say that "[f]irst, for a sense to count as distinct, it must contain additional meaning not apparent in any other senses associated with a particular form, that is, a distinct sense must involve non-spatial meaning or a different configuration between the TR and LM than found in the proto-scene. Second, there must be instances of the sense that are context independent, that is, in which the distinct sense could not be inferred from another sense and the context in which it occurs." Although the aforementioned tools look as they are providing a solid ground for a uniform analysis of a larger number of prepositions within one language and/or between different languages, they have several problems. First, how large must the analysed corpus be? If there is no context independent reading of a sense in a corpus of 1,000 examples but there is in a corpus of 10,000 examples, are we talking about a separate sense of a preposition or not? It is just not possible to inspect all usage occurrences of a single preposition and claim with certainty that the meaning in question is always a result of the context. Second, as Van der Gucht, Willems, and De Cuypere (2007) show by identifying mistakes in Tyler and Evans (2003) description of English preposition *over*, it is not possible to unanimously claim that some meaning is or is not context-dependent. Although Tyler and Evans (2003) propose a good starting point in the process of methodology constraining, their approach raises a number of other questions.

meanings, and these are just two of many different descriptions of this prepositions. Who is right? Is this not one of the problems observable in traditional approaches against which cognitive linguistics so loudly advocated? Matovac (2013) indicates that discussion on the number of meanings that constitute the semantic network of a preposition, or any other linguistic unit, although valid and needed if we want to properly understand how human mind works, cannot be adequately closed. Psycholinguistics and cognitive neurosciences still have not developed bullet-proof tests that would efficiently prove cognitive reality of one presumed meaning and disprove cognitive reality of the other. Therefore, while producing their descriptions, linguists should, before anything, bear in mind the purpose and adequacy of their descriptions. They should base their descriptions on the same presumptions – all meanings are interconnected and spatial meaning has a prominent place in the semantic network of primary prepositions.

Since the question of identification of meanings in the semantic network of any given preposition is not uniformly answered, in this paper it will be presumed that grammar books and dictionaries of the Croatian language have highlighted and identified the most prominent meanings of the preposition *po*, i.e. it will be assumed that comparison of different grammar books and dictionaries can give reasonable insight into the list of meanings constituting the semantic network of the preposition *po*. This comparison will be a starting point for a further analysis that will yield a more detailed insight into relations between different meanings of the preposition *po*.

3. SEMANTICS OF PREPOSITION *PO*

Grammar books by Silić and Pranjković (2005) and Raguž (1997) and dictionaries by Šonje (2000) and Anić et al. (2004) describe the meaning of the preposition *po* using many different labels to describe specific usages, often labelling similar examples differently or different examples in the same way. Sometimes usages of near synonyms to describe similar examples make it hard to see whether an author thinks that these examples are to be considered as belonging to the same or to a different meaning. Furthermore, Šonje (2000) does not even distinguish between the locative and accusative usages. As a conclusion we can say that some of the labels are more or less overlapping, and some are totally misleading or incomprehensible (e.g. it is not quite clear what Silić and Pranjković (2005: 232) think when they say that the preposition *po* with the locative case can have "značenje koje je blisko značenju čistoga odnosa" 'meaning that is close to the meaning of pure relation'). This probably seems chaotic, especially to non-linguists and non-native speakers of Croatian. The analysis that follows attempts to make sense out of this chaos, which is for the purposes of a short overview summarized in Table (1). An attempt will be made to constrain the chaos in question not by proclaiming any single description in some of these grammar books and dictionaries as better or worse than the descriptions in others but, in accordance to the previously explained theoretical presumptions, by showing that different meanings, regardless of how are they labelled, all form part of one semantic network that is highly motivated by prototypical/primary spatial meaning based on the concepts of MOTION and SURFACE.

	Silić and Pranjković (2005)	Raguž (1997)	Šonje (2000)	Anić et al. (2004)
L	*spatial meaning or supralocality (movement or distribution on a surface); *temporal meaning or posteriority; *spatial temporality; *pure relation; *comparison; *modality *instrument; *cause; *origin or ablative meaning; *goal or purpose; *in passive constructions	*distributive meaning; *moving on a surface; *posteriority; *duration or circumstances; *instrument; *criteria; *manner; *attribute	*place; *time; *instrument; *measure, quantity; *purpose, goal; *posteriority; *'according to' in different contexts	*space or time which bounds activity; *time after; *manner in which the activity is being pursued; *cause; *instrument and mediation; *attributive meaning; *according to; *relation in sequence; *origin; *purpose
A	*goal or cause of movement; *value or price	*goal and purpose; *value and (better) price; *purpose, i.e. harm or benefit		*purpose or goal of an action; *duration; *manner and condition; *benefit or harm; *price; *multiplicity

Table 1: Meanings of preposition *po* according to Croatian grammar books and dictionaries

Of course, when it comes to the meaning of prepositions in languages like Croatian, it has to be said that it is necessary to study their meaning by taking into consideration the case they combine with. Almost as a rule papers dealing with descriptions of prepositions in Slavic languages contain sentences like the following (the emphases are mine): "In a case language, [...], prepositions *do not exist in isolation from the case* – an occurrence of a preposition *requires the presence of an oblique case-marker* on the word or a group of words that preposition precedes" (Bacž 1999: 137) or "In case-languages such as Slavic, prepositions are *always linked with cases*" (Šarić 2006b). These kinds of statements are overly restrictive and they slightly distort the overall picture of the prepositional usage in Slavic languages. For example, in the Croatian language prepositions can combine with the infinitive form (*priča za smijati se* 'story to be laughed at'), with an adverb (*spavati do sutra* 'to sleep until tomorrow'), with another prepositional phrase (*otrčati do pred vrata* 'to run to in front of the door') and even with a sentence (*cipele za kad pada kiša* 'shoes for rain'). These non-typical prepositional usages are, as a rule, neglected in descriptions of (Slavic) languages.

- (1) a) *Mačka hoda po krovu_{LOC}*
‘The cat is walking on the roof.’
- b) *Idem po kruh_{ACC}*
‘I’m going to get bread’
- c) *S obje strane mosta stajao je po čuvar_{NOM} s puškom*.
‘On either side of the bridge there was a guard standing with a rifle.’
- d) *Svako jutro dolazi po mlijeka_{GEN}*.
‘Every morning he comes to get milk.’
- e) *Morao bi to prodati po u katalogu navedenoj cijeni*.
‘He should sell it according to the price listed in the catalogue.’

Preposition *po* normally combines with the locative case, as in (1a), and with the accusative case, as in (1b), locative constructions being more frequent (details of usage frequency will be discussed below). In addition to the locative and accusative case, the linguistic unit *po* can combine with the nominative case, as in (1c), and with the genitive case, as in (1d). These usages are not frequent and they are not mentioned in contemporary Croatian grammar books or dictionaries consulted for the purposes of this paper (Silić and Pranjković 2005; Raguž 1997; Šonje 2000; Anić et al. 2004). The first question that needs to be answered here is whether *po* in these examples is a preposition at all. In Matovac (2013) *po* as used in (1c) is described as a particle and this is justified by the fact that *po* in this example can be dropped from the sentence and the sentence will remain grammatically and semantically valid, e.g. *s obje strane mosta stajao je čuvar s puškom* ‘on either side of the bridge there was guard standing with a rifle’. If we apply the same rule to some other examples, we can see that *po* is not always a preposition as modern grammars of Croatian indicate, e.g. with the accusative as in *svako jutro pojede po kiflu_{ACC} i popije po jogurt_{ACC}* > *svako jutro pojede kiflu_{ACC} i popije jogurt_{ACC}* ‘every morning he eats a roll and drinks a yogurt’, with an adverb as in *razdijelila je svakomu po malo_{ADV}* > *razdijelila je svakomu malo_{ADV}* ‘she gave a little bit to everyone’ or with other prepositional phrase as in *privežem svaki kraj po za_{PREP} jednu granu_{ACC}* > *privežem svaki kraj za_{PREP} jednu granu_{ACC}*. ‘I tied each end to one of the branches’. As shown, the particle *po* can be freely omitted in all previous examples and sentences will remain grammatically and semantically valid. Particle *po* is used instead in these examples to add or emphasise the distributive meaning – the emphasis of distribution therefore needs to be identified as the primary function of this particle.⁵ Older dictionaries mention these uses of *po*, e.g. dictionary by Iveković and Broz (1901) describes *po* as a preposition with the locative and with the accusative and

⁵ As indicated in Matovac (2013), the usage of the particle *po* needs further investigation. One particular example that needs further explanation is the construction *x po x* ‘x by x’ as in *jedan po jedan* ‘one by one’. In this construction *po* cannot be a particle since it cannot be omitted, but, on the other hand, it cannot be a preposition either since it combines with the nominative case. In addition, the construction *x po x* can be used in any case, e.g. in the dative as in *pišem pismo jednoj_{DAT} po jednoj_{DAT}* ‘I’m writing letters to one at the time’ or in the instrumental as in *razgovarat ću s jednom_{INST} po jednom_{INST}* ‘I’ll talk to one at the time’.

as an adverb. As adverb, it is used to add distributive meaning to the words that are already marked by some other case, i.e. Iveković and Broz (1901: 51-52) list that distributive *po* can be used with the nominative, genitive, dative, accusative and before other prepositional phrases. Although Iveković and Broz (1901) provided a good insight, they were not right in claiming that *po* is an adverb in these usages since it cannot be used without a complement. When it comes to contemporary grammar books of Croatian not written in Croatia, grammar by Alexander (2006) discusses the usage of the preposition *po* with cases other than locative and accusative, also highlighting its distributive meaning as a central idea that links different usages.⁶ The only problem with the description in Alexander (2006) is that it does not distinguish between the preposition *po* and the particle *po*. Distributive meaning is present in the usages of the preposition *po*, as it will be shown in following paragraphs; it can be speculated that these usages were the starting point of the grammaticalization that lead to the development of the particle *po*.

When it comes to the usage of *po* with the genitive case, as exemplified in (1d), it can be said that *po* is a preposition here and that the *po* + *genitive* construction indicates intention or cause. Matovac (2013) speculates that this construction is an outcome of the reduction of the construction *po* + *quantitative expression* + *genitive*, e.g. *doći po malo_{QUANT} mlijeka_{GEN}* ‘to come and get some milk’, *doći po kilogram_{QUANT} šećera_{GEN}* ‘to come and get a kilogram of sugar’, *doći po litru_{QUANT} vina_{GEN}* ‘to come and get a litre of wine’ etc. In such constructions the quantitative expression can be omitted since it is usually understandable from context (we know liquids are usually measured in liters or bottles and that solids are measured in kilograms or packages). In addition, quantitative expressions in Croatian language require a complement in the genitive case. Therefore, when a quantitative expression (that is actually coded by the accusative case if it is expressed by a noun, as in *idi mi po čašu_{ACC} vode_{GEN}* ‘go get me a glass of water’) is omitted, we have a *po* + *genitive* construction (*idi mi po vode_{GEN}* ‘go and get me water’). In the same way the preposition *za* is used with the genitive case to express a temporal meaning of ‘simultaneity’. Here we have a reduction of the construction *za* + *accusative form of noun meaning ‘time’* + *genitive* into *za* + *genitive* – e.g. expression *za vrijeme_{ACC} proljetnog sajma_{GEN}* ‘during the time of spring fair’ has the same meaning as expression *za proljetnog sajma_{GEN}* ‘during the spring fair’. The fact that the usage of the preposition *za* with the genitive case is the outcome of reduction is stated as a part of the description of the preposition *za* in Silić and Pranjković’s grammar book (2005: 210). To conclude, usages of the construction *po* + *genitive* are not frequent and speakers usually describe them as highly stylistically marked or even non-grammatical. In this case, an old linguistic proverb rings true – that what is of low frequency in language is either disappearing or emerging.

⁶ "The idea of distribution is expressed by the preposition *po*, whose object identifies the metric of distribution. English translations often use the words *per*, *each* or *a piece*; the precise translation depends on the context of any one expression. The idea of succession (as in English *one by one*) is also expressed by this preposition. What is unique to both these usages is that the preposition does not require a specific case. Rather, the case of the following noun is determined by the structure of the sentence in which it occurs. Normally, either the nominative or the accusative case follows *po* in these two meanings." (Alexander 2006: 79)

Examples (1a) to (1d) show the most typical usages of *po* in contemporary Croatian, going from the most to the least frequent (examples (1a), (1b) and (1d) showing the usage of the preposition *po* and example (1c) showing the usage of the particle *po*). In addition, example (1e) shows the combination of the preposition *po* with another prepositional phrase, another usage that is not frequent and that is not mentioned in the descriptions in grammar books and dictionaries. It must be indicated that in (1e) the preposition *po* does not actually combine with another prepositional phrase as the preposition *do* does in example *pričali smo do u kasnu noć* ‘we talked till late in the night’ or the preposition *za* in example *kupio sam pivo za poslije ručka* ‘I bought beer for after lunch’. Instead, in example (1e) the preposition *po* is separated from its complement by another prepositional phrase that actually serves as a modifier (attribute) of the noun which the preposition *po* combines with. This usage is highly stylistically marked since, in the Croatian language, prepositional phrases as modifiers typically follow the noun they combine with. The stylistically unmarked version of example (1e) would be *morao bi to prodati po cijeni navedenoj u katalogu* ‘he should sell it according to the price listed in the catalogue’.

In Matovac (2013) a corpus of 1,000 occurrences was analysed in order to describe the semantics of the preposition *po* – 800 occurrences being taken from *Croatian Language Corpus*, and 200 examples collected in research conducted among 200 native speakers of Croatian. *Croatian Language Corpus* (<http://riznica.ihjj.hr/>) is a rather rudimentarily equipped corpus so all the systematization of data had to be done manually. Out of 800 examples, 500 were taken from a literary sub-corpus (four novels and one nonfictional book), and 300 from a newspaper sub-corpus. All texts were published and made available for the first time after the year 2000 so the analysis reflects contemporary Croatian language. For the purposes of this paper, mostly new examples were collected and analysed (‘Internet as corpus’ method was used when examples were not to be found in *Croatian Language Corpus*).

In what follows the usages of the preposition *po* with the locative case will be addressed first since these usages are more frequent than usages with the accusative case. In Matovac (2013) the usage frequency of the preposition *po* is analysed within the corpuses and within data collected by research. When instructed to produce a sentence containing a preposition *po*, 141 participants used the preposition *po* with the locative and 59 with the accusative, i.e. the preposition *po* was used with the locative in 70.5% of produced sentences. Furthermore, in 800 examples taken from *Croatian Language Corpus* the preposition *po* was used with the locative in 664 of them, i.e. in 83% of the analysed examples. In addition, the usage frequency of the preposition *po* is checked within *hrWaC Corpus*, the biggest corpus of Croatian language (910 million tokens), based on web as corpus methodology (<http://nlp.ffzg.hr/resources/corpora/hrwac/>). In this corpus the preposition *po* is in 1 461 200 (85.26%) examples used as a locative preposition and in 252 571 (14.74%) examples as an accusative preposition (in 5,630 occurrences *po* is tagged wrongly, e.g. as a noun). For the purposes of this paper the usage frequency of the preposition *po* is checked additionally within the *Croatian National Corpus* (<http://www.hnk.ffzg.hr/>). In this 216.8 million token corpus, the preposition *po* occurs 288,302 times

(frequency of 1329.7 per million). Just to compare, the most frequent preposition in Croatian, the preposition *u*, occurs in this corpus 5362 501 times (the frequency of 24733.4 per million). The preposition *po* is in 268403 (93.03%) examples tagged as a locative preposition, and in 17701 (6.13%) examples as an accusative preposition (in 2198 occurrences *po* is wrongly tagged both as an accusative and a locative preposition, although the quick overview shows that in most of this cases *po* is used with the locative case). Table (2) summarizes the usage frequency of the preposition *po*.

	Research (Matovac 2013)	Croatian Language Corpus	hrWaC corpus	Croatian National Corpus
number of tokens	200	800	1719101	288302
locative	141 (70.5%)	664 (83%)	1461200 (85.26%)	268403 (93.03%)
accusative	59 (29.5%)	136 (17%)	252571 (14.69%)	17701 (6.13%)
other	-	-	5630 (0.05%)	2198 (0.84%)

Table 2: Usage frequency of preposition *po*

3.1. PO + LOCATIVE

3.1.1. 'Movement on a surface' as prototypical meaning of preposition *po* and other spatial meanings

In its prototypical usage the preposition *po* with the locative case profiles a spatial relation between a trajectory that is moving on a surface of a landmark, as exemplified in (2a), i.e. its basic spatial meaning is based on the concepts of MOTION and SURFACE. Having a prototypical meaning of 'movement on a surface', the preposition *po* is a dynamic equivalent of the prototypically static preposition *na* which, when combined with the locative case, denotes 'placement on a surface', as exemplified in (2b). There can be found examples in which the preposition *na* concurs with the preposition *po* in describing 'movement on the surface', e.g. as in *trčala je na livati* and *trčala je po livadi* 'she ran on the meadow', but examples like this are rather rare. Furthermore, in examples with *na*, the information regarding location of a trajectory is more important than the information regarding its movement, while in examples with *po* location and movement are equally important. Being based on the concept of MOTION, the preposition *po* is of an inherently dynamic meaning and, by being inherently dynamic, the preposition *po* differs from other locative prepositions (prepositions *na*, *o*, *u* and *pri*), all of which are static. Preposition *po* is similar to other static locative prepositions in that the movement which it profiles is constrained within the boundaries of the place expressed by the noun marked by the locative case. So even though the preposition *po* profiles a dynamic relation, this relation does not imply the existence of different spaces between which this dynamics occurs (e.g. adlative preposition *do* in *idem do grada* 'I'm going to

the city' implies two spaces – one in which the trajectory is at the moment and another that is the goal of adlative movement the trajectory undertakes). That is the influence of semantics of the locative case – the dynamic relation expressed by the preposition *po* is defined by the space in which it occurs, similarly to the way static relations are expressed by other locative prepositions.

- (2) a) *Ne volim čekati pa od nervoze hodam po trgu uzduž i poprijeko.*
 'I don't like waiting, so nervousness makes me walk all over the square.'
 b) *Sjedim na trgu, pijem kavu.*
 'I'm sitting on the square, drinking coffee.'
 c) *Trinaestogodišnji dječak penje se po zidovima kao Spiderman.*
 'A thirteen year old boy climbs walls like a Spiderman.'
 d) *Kako kukci hodaju po stropu?*
 'How do insects walk on the ceiling?'

In most typical situations where the preposition *po* is used, the trajectory moves on the upper side of a horizontally oriented surface of landmark (2a); in some examples the trajectory can move on a surface of landmark that is vertically oriented, as in (2c), or it can even move on the lower side of a horizontally oriented surface (2d). Deviations in the properties of a landmark are possible as long as the overall picture is similar to the prototypical schematic representation of the 'movement on a surface'. The prototypical 'movement on a surface' meaning of the preposition *po* is schematically represented in Figure (1).

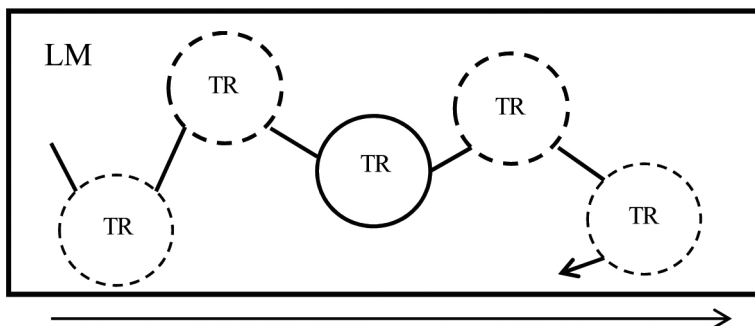


Figure 1: Schematic representation of 'movement on surface' meaning of preposition *po*

Since the preposition *po* is inherently dynamic, it naturally combines with verbs that designate some kind of movement, e.g. *hodati* 'to walk' or *trčati* 'to run'. Verbs are imperfective, i.e. the preposition *po* designates movement in duration, perlocative movement to be more precise. In some (rare) situations perfective verbs can be

used, e.g. *popeti se po zidu* ‘to climb up the wall’ or *prijeći cestu po zebri* ‘to cross the street at the crosswalk’. The usage of perfective verbs of movement is possible because in such situations a landmark, through the concept of SUPPORT that is always present when there is a concept of SURFACE, supports and allows the trajectory to complete its movement, i.e. the landmark is more of a means used to accomplish a goal indicated by the perfective verb. The movement designated by the preposition *po*, as in (2a), can best be described as not being specified – it has no specific starting point or endpoint and the shape of trajectory’s path is not indicated (although it can be conditioned by the nature of the landmark, e.g. in examples (4a) and (4b)). The locative case provides information that the movement is kept within the borders of a landmark. Since non-specified movement is a basic spatial meaning of the bare instrumental case, constructions of *po* with the locative are interchangeable with the bare instrumental case, as in example (3a) and (3b) (instrumental is primarily static case, dynamic interpretation in (3b) is conditioned by a verb of motion and this verb of motion is what motivates the interpretation of landmark as PATH – more on the interpretation of instrumental as a static case which designates generic space can be read in Matovac (2013: 238-241)). Stolac (2009) claims that there exists a synonymous relation between spatial bare instrumental in (3b) and spatial *po* with the locative in (3a), but it would be suspicious if a language would employ two different forms to convey the same meaning, especially when it comes to such basic meanings as spatial meanings are (see the same observation on the difference between the usage of the bare dative case and the dative case with the preposition *k* in Šarić (2008)). The instrumental case designates ‘movement in a generic space’ while *po* with the locative provides more detail information by specifying that space is conceptualized as SURFACE. In contrast, if space is conceptualized as CONTAINER, then the preposition *kroz* with the accusative is used, as in (3c). If the SURFACE or CONTAINER properties of space (i.e. landmark) and consequences that these properties impose on a trajectory and its movement are not relevant for the proper interpretation of the utterance, only then is an interchange between these constructions possible. This is a direct proof that cases have more abstract, more generic meaning than prepositions and a proof that more grammaticalized forms have more abstract meaning.

- (3) a) *trčati po šumi*
 ‘to run around in the forest’ = lit. ‘to run on the forest’⁷
 b) *trčati šumom*
 ‘to run around in the forest’
 c) *trčati kroz šumu*
 ‘to run through the forest’

⁷ English conceptualizes forests as CONTAINERS; while in Croatian *šuma* ‘forest’ can be seen as SURFACE or as CONTAINER, depending on the construal.

The shape of trajectory's path is not specified in constructions where *po* is used with the locative case. If the shape of trajectory's path can be interpreted then this has to do with the semantics of the noun designating the landmark, i.e. the interpretation of the shape of trajectory's path is directly drawn from the encyclopaedic knowledge of the properties of a landmark. In these cases the trajectory's path is conditioned by the physical properties of the landmark. In example (4a) the trajectory *tramvaj* 'tram' moves on a surface of an elongated landmark *tračnice* 'rails'. Since the surface of the rails is long and narrow, it allows trams to move only in one direction – along the rails (more accurately, spatial properties of elongated landmarks force the trajectory to move in one of two possible directions, but the more specific information on the direction is provided by the other lexical elements in the construction such as adverbs, e.g. *lijevo* 'left', *desno* 'right', *gore* 'up', *dolje* 'down', *naprijed* 'forward' etc.). The landmark in this example is inherently oriented because of its shape and therefore it traces the path for the trajector, i.e. the trajector has no other option than to move as instructed/enabled by the landmark. The same applies to the proverb in example (4b), in which the trajectory's movement is determined by the spatial properties of the landmark – *lojtre* 'ladder' are always in vertical position (if they are to be functional) and therefore the trajectory can move only up or down.

- (4) a) *Da ponovimo, tramvaj vozi po tračnicama, nema izbora...*
 'Let us repeat, the tram moves on the rails, it has no other options...'
 b) *Po lojtrici gor' pa po lojtrici dol'.*
 'Up and down the ladder.'

Usages as those in examples (4a) and (4b) are very straightforward in showing the functional consequences of a spatial relationship between a trajectory and a landmark – they show how the trajectory follows a path traced by the spatial properties of the landmark. In Bacz (2002: 3) the notion of following something characteristic of a landmark is identified as the central idea motivating all spatial and non-spatial usages of the preposition *po* in Polish (this is open to debate since it is hard to identify properties of the landmark that the trajectory is following in examples such as (2a) or (3a)). Furthermore, according to Janda (1993: 126) the idea of following a path indicated by the dative referent is the central idea behind Russian *po* used with the dative case. As seen in examples (4a) and (4b), the idea of following a path can be seen as relevant for the description of Croatian *po*, but it seems more reasonable to accept a notion that the concept of FOLLOWING is not crucial for the description of the semantics of the preposition *po* (the idea of following a path and therefore the concept of FOLLOWING is just an impression which is the outcome of the directed movement imposed on the trajectory by the spatial properties of a particular landmark).

Examples in (5a) and (5b) show that the preposition *po* can be used with verbs which do not indicate motion but do specify some kind of activity. In such cases the preposition *po* conveys the meaning of 'activity on a surface' but if we take a closer look into the semantics of these verbs it can be seen that these verbs do express some

kind of movement. The situation in (5a) could not be imagined in any other way but as a pencil moving over the surface of paper, and in (5b) as children moving all over the surface of the street. Regarding the example (5b), most speakers of Croatian would use the preposition *na* instead of the the preposition *po* in such contexts since the preposition *na* tends to get used to expressing activity, e.g. *idem na vlak* ‘I am going on a train’ communicates that the trajectory is going to do some activity that involves a train (ride it), *bio sam na pošti* ‘I was at the post office’ communicates that the trajectory performed some kind of activity involving postal services etc. In addition, the verb *igrati se* ‘to play’ is suitable for coding many different activities and does not call for the inherently dynamic preposition *po*.

- (5) a) *Predavanje je bilo dosadno pa sam crtao gluposti po bilježnici.*
 ‘The lecture was boring so I doodled in the notebook.’
- b) *Djeca se igraju po ulici.*
 ‘Kids are playing on the street.’
- c) *Cijelu noć sam vozio po magli.*
 ‘The whole night I was driving in the fog.’
- d) *Utakmica se ne može igrati po takvoj hladnoći.*
 ‘The match cannot be played at such low temperatures.’

The interpretation of the meaning of the preposition *po* in previous examples, (5a) and (5b), is closely related to the meaning evident in examples (5c) and (5d). Silić and Pranjković (2005) label this meaning as ‘spatial temporality’. In example (5c) we have an activity of driving – an example of motion – that is being performed within boundaries of some time period expressed by a noun. Although the noun *magla* ‘fog’ does not have a precise temporal meaning, it is obvious that it is something defined as prolonged but constrained in time (our everyday experience and knowledge about fog and its properties supports this). On the other hand, time is metaphorically perceived as a line, and a line can be seen as a one-dimensional surface. Therefore, fog as a segment of the line can also metaphorically be seen as a surface, and, consequently, (5c) is an example of ‘motion on a surface’. The same applies to (5d), just in this case ‘activity on a surface’ is conveyed. In addition, examples (5c) and (5d) have circumstantial interpretation derived from the knowledge about natural phenomena, which fog and coldness are (‘spatial temporality’ is always connected with some kind of natural phenomena). Furthermore, the preposition *po* in examples (5c) and (5d) could be substituted by the preposition *tijekom* ‘during’ which highlights temporal interpretation, and in (5d) by the preposition *pri*, primarily expressing spatial proximity.

‘Distribution on a surface’ meaning of *po* with the locative, exemplified in examples (6a) to (6d), is closely related to the meaning ‘movement on a surface’ – trajectory distributes itself over a landmark while moving on its surface. The notion of distribution is described as the act of dividing or apportioning among several or

many. This means that the surface of the landmark on which a trajectory is moving must be seen as an area divided into or containing segments or specific points that are being highlighted by the motion (the idea that motion is change of position during segmented time, when brought to the extremes, results in a paradox, as is known ever since Aristotle discussed Zeno's Arrow Paradox). This idea of multiple segments is often highlighted by plural nouns designating landmark, as in the example (6a), where the trajectory is moving in such a manner that it stops in a number of stores. Example (6a) could be described as a transition from 'movement on a surface' to the 'distribution on a surface' meaning of the preposition *po*.

- (6) a) *Gadim se sama sebi, trčala sam po trgovinama cijeli dan.*
 'I am disgusted with myself, I've been running from store to store the whole day.'
- b) *Sviramo po kućama, svadbama, razvodima i sprovodima.*
 'We play in homes, at weddings, divorces and funerals.'
- c) *Igračke su razbacane po podu.*
 'Toys are scattered all over the floor.'
- d) *Brašno je po cijelom stolu.*
 'Flour is covering the (entire) table.'
- e) *Brašno je na stolu.*
 'The flour is on the table.'

The 'distribution on a surface' meaning of the preposition *po* with the locative is more obvious in situations in which the trajectory is not moving. In example (6b), the trajectory – a band – is performing an action of producing music and this action is seen as distributed over a number of different segments classified according to place or location/occasion. In (6c), the idea of distribution of the trajectory on the surface of a landmark is not conveyed by a verb since the verb has no meaning of motion and it is not conveyed by a noun designating the landmark since the noun is in the singular, so it has to be conveyed by a noun designating a trajectory – the idea of distribution of the trajectory on the surface of a landmark is achieved by the plural form of the noun *igračka* 'toy'. In addition, the distribution of the trajectory over the landmark's surface is a result of an action performed by an entity other than the trajectory and the nature of this action is not structured as indicated by the verbal prefix *raz-* designating the state of dispersion (for semantics of verbal prefix *raz-* see Belaj (2008)). Distribution is often a result of someone's action's influence and, therefore, passive forms are frequent with this meaning of the preposition *po*. Furthermore, as example (6d) shows, 'distribution on a surface' is present in situations where there is no movement or plural markers to indicate distribution. This is easily explained if we take the nature of the trajectory *brašno* 'flour' into consideration – it is not a discreet object, but it consists of smaller parts, i.e. it is more of a continuous substance and, because of this property, such small particles can be seen as distributed over the surface of the landmark *stol* 'table'. Distribution over a surface often implies coverage – if the trajectory is distributed over the whole surface of a landmark, then the landmark is protected from being

seen by the observer. Since distribution conveyed by the preposition *po* is connected with an unstructured and rather chaotic movement, an idea of a full, systematic coverage is not connected with the preposition *po* – preposition *preko* ‘across, over, on the other side, beyond’ is used to express this idea in Croatian. If the trajectory is distributed over the whole surface of a landmark, such a state has to be implied by other lexical elements, as in the example (5d) where such information is conveyed by *cijelom* ‘whole’. The distinction between continuous matter and discreet substance is of great importance for the distribution of the preposition *po* and *na* with the locative in situations where trajectory is static. If the trajectory is perceived as a discreet substance, the preposition *na* is used. If the trajectory is perceived as a continuous substance, the preposition *po* is used. The information that the preposition *po* should be used with any given trajectory comes out from the encyclopaedic knowledge on the trajectory in question. Of course, some trajectories can be seen as discreet substances and as continuous matter, depending on the information that is to be conveyed, as in examples (6d) and (6e) where the trajectory *brašno* ‘flour’ is firstly presented as a continuous matter and then as a discrete substance.

3.1.2. Non-spatial meanings

Among one of the systematically mentioned meanings of the preposition *po*, prevalent in all grammar books and dictionaries of the Croatian language but identified as infrequent in modern-day Croatian, is the meaning that could be labelled as ‘posteriority’. Contemporary grammar books, dictionaries and normative manuals describe this meaning, exemplified in (7a), as normatively unacceptable – prepositions *nakon* and *poslije*, both meaning ‘after’, are to be used instead in such contexts. If we follow Bacz (1999; 2002) we can say that the reason why the preposition *po* is used to express the idea of posteriority lies in the concept of FOLLOWING which is present in spatial uses of the preposition *po*. If an event follows another event, it will necessarily occur after the event it follows. Although the previous explanation is valid, it is more reasonable to think of the idea of posteriority as motivated by the concept of SUPPORT (and the concept of SUPPORT is a functional consequence of the spatial relation involving surfaces), i.e. support in space is metaphorically extended to support in time, and to support something in time, means to come ahead of it, to be prior to it. In this way we can also explain the implication of posteriority in example (7c) – first there was a command and then an action followed – although in this example the *po* + *locative* construction primarily indicates ‘cause’, the action was caused by a command. The frequency of the usage of the construction *po* + *locative* to indicate posteriority, as already indicated, is low in contemporary Croatian, but this was not the case in previous periods. In addition, the corpus analysis shows how, in a great number of examples in which it conveys the idea of posteriority, *po* is combined with nouns meaning *svršetak* ‘end’ or *istek* ‘expiry’. These nouns are followed by nouns in the genitive further specifying the expression, as in example (7b). Since the genitive complement is semantically required by nouns signifying ‘end’ (their meaning is abstract and needs specification), expressions such as *po svršetku* ‘by the end of’ or *po isteku* ‘by the expiration of’ can be described as secondary prepositions that are just beginning

their process of grammaticalization (grammar by Silić and Pranjković (2005), the only grammar book of the Croatian language that mentions prepositional phrases as secondary prepositions, fails to include the expressions like such as *po isteku* or *po svršetku* into the list of prepositions). It is interesting to observe that prepositions *nakon* and *poslije* are also secondary prepositions. In addition, the preposition *nakon* is a result of the process of grammaticalization of the primary preposition *na* which is, just like the preposition *po*, linked to the concept of SURFACE and the noun meaning ‘end’. This noun is not present in modern Croatian language, but its traces can be observed in nouns such as *konac* ‘end’ or *konačište* ‘dosshouse’, in verbs *skončati* and *okončati*, both roughly meaning ‘to terminate, to complete, to put to an end’ or the complex preposition *na koncu* ‘at the end of’. In addition, the etymon *kon* is the grammaticalization source of the preposition *kod* (Šarić 2008: 142).

- (7) a) *Doći će po Novoj godini.*
 ‘He will come after the New Year.’
- b) *Po svršetku rata dolazi u Beč i započinje studij.*
 ‘After the war had ended, he moved to Vienna and started his studies.’
- c) *Pjevala je po naredbi.*
 ‘She was singing on command.’

The meaning of the preposition *po* that can be observed in examples (8a), (8b) and (8c) could be labelled as ‘manner’. One of the observations on languages that has been proven by much research conducted within the framework of cognitive linguistics is that expressions used to convey information about means or manner of doing an action are often based on the concept of PATH, i.e. the manner of performing an action can be seen and is seen in many situations and in different languages as an abstract path that is being transgressed during the process of performing an action. Since the preposition *po* designates movement of a trajectory on the surface of a landmark, and, in addition to that, the landmark can determine the way the trajectory moves, as in examples (4a) and (4b), it is not surprising that usages in which the preposition *po* conveys the meaning of ‘manner’ are frequent in the Croatian language. Their frequency often turns them to phrases, e.g. *po planu* ‘according to a plan’, *po sili zakona* ‘according to law’ etc. In addition, seeing movement on a surface as the manner of completing an action is supported by the concept of SUPPORT, which is inseparably connected with the concept of SURFACE (a landmark is not only a path that a trajectory transgresses but the landmark also makes the trajectory’s movement possible by supporting it and not letting it to subject itself to the force of gravity). The preposition *po* with the locative is used without constraints to express manner with verbs that do not indicate movement, as in examples (8b) or (8c).

- (8) a) *Kretao sam se po unaprijed zadanim uputama.*
 ‘I was moving following the instructions given in advance.’
- b) *Od danas pet policijskih postaja radi po novim pravilima.*
 ‘Strating today five police stations are operating in accordance with the new rules.’
- c) *Najbolje je kad čitatelji biraju po ljubavi.*
 ‘It is best when readers make choices motivated by love.’

Contrary to the meaning of the preposition *po* discussed in the previous paragraph, the meaning that can be labelled ‘cause’ is not frequent at all in the Croatian language. This information is even given in Croatian grammar books, e.g. Silić and Pranjković (2005: 232) highlight this usage as frequent only with nouns such as *posao* ‘job’ or *zadatak* ‘assignment’ (those nouns mean something that is imposed, and therefore caused by someone other than the person doing the action). Meaning labelled ‘cause’ is demonstrated in examples (9a), (9b) and (7c). Emergence of this meaning is also in connection with perceiving a trajectory as moving along a path; in other words, this meaning is motivated by the primary spatial meaning of ‘movement on a surface’. Every movement evokes three concepts – SOURCE, PATH and GOAL – and always when there is a concept of SOURCE, even if only implied, such is the case of the preposition *po*, it can motivate the usage of expression to convey information about what caused an expressed action. Furthermore, every SOURCE can be seen as a place of origin. Bearing this in mind, it is natural that Silić and Pranjković (2005: 248), when discussing non-spatial meanings of prepositions in Croatian, exemplify ‘origin’ i.e. ‘ablative’ meaning with prepositional phrases with *po*, e.g. *po podrijetlu (biti Nijemac)* ‘(to be a German) by descent’ and *po ocu (biti nagle naravi)* ‘(to be temperamental) after his/her father’. A typical way of expressing ‘origin’ with prepositional phrases is by the genitive case and preposition *s* (if the source is seen as SURFACE), *iz* (if the source is seen as CONTAINER) or *od* (if the source is seen as POINT).⁸ In examples where the preposition *po* is used to express the origin of a trajectory, the landmark is seen more as a path than as a source, i.e. in these examples it can be said that the preposition *po* is used to identify the origin with manner in which something comes into existence.

⁸ It is surprising to observe that Silić and Pranjković (2005: 248) fail to mention the usage of the preposition *s* with the genitive case when they are exemplifying non-spatial meaning of ‘origin’. Probably just a slight oversight.

- (9) a) *Muškarci smrde po siru, a žene po luku.*
 ‘Men smell like cheese, women like onions.’
 b) *On je po zadatku došao ispred jedne kuće u Siesta Keyu kako bi istražio priču o prevari te je ostao bez auta.*
 ‘Following his assignment, he came in front of a house in Siesta Key to investigate a story on infidelity and he lost his car.’
 c) *Lik je bez problema rekao da će telefon poslati po prijatelju*
 ‘The dude simply said he would send the phone by his friend.’
 d) *Zanimljivo je da je ime Ronaldo dobio navodno po američkom predsjedniku Ronaldu Reaganu*
 ‘It is interesting that Ronaldo allegedly was named after the American president Ronald Regan.’
- (10) *Upozorenje mi je poslao po zajedničkom prijatelju.*
 ‘He sent me a warning through our mutual friend.’
- (11) *Poklon ti je poslan po sestri.*
 ‘The gift is sent to you through your sister.’

The meaning labelled ‘means’, exemplified in (10), is also motivated in the same way as the meaning ‘manner’ and it is very close to it, but the difference here is that the landmark, connected to the concepts of PATH, SURFACE and SUPPORT, is not an object or something non-living but human or something corresponding to an idea of a human to a degree (e.g. robots). In the Croatian language the main way of expressing ‘means’ and ‘instrument’ is a bare instrumental case and this form needs to be used when a landmark is an object. We can wonder why the bare instrumental case is not used with humans and why the preposition *po* with the locative is used instead. One possible explanation is that humans cannot be conceptualised as pure INSTRUMENTS since they have their own will and they cannot be used or, rather, it is not socially acceptable to use them as objects (prototypical instruments). Therefore it is more appropriate to conceptualise them as PATH along which an action can be accomplished or, to be more precise, as a PATH that is SURFACE that provides SUPPORT and therefore makes the accomplishment of an action possible. The fact that people usually move while performing actions further motivates the usage of the preposition *po* with the locative in these contexts. It is also important to notice that meaning ‘means’ of the preposition *po* regularly appears with verbs *slati* and *poslati*, roughly meaning ‘to send something or something somewhere’, i.e. with verbs that imply movement.

The preposition *po* with the locative case, although against prescriptive normative rules of the Croatian language, is used in passive constructions to express a doer of an action, e.g. in example (11). In such constructions the doer of an action is conceptualised as PATH along which some action and its consequences are being forced onto a patient highlighted by nominative coding. The problem is that the preposition *po* is primarily connected with the concept of PATH and is used in passive

constructions to highlight the concept of SOURCE and express ‘cause’. Even though, as previously explained, the preposition *po* with locative can express ‘cause’ ((9a), (9b) and (7c)), such a usage is not frequent. Therefore, some other prepositions are more suitable for expressing the doer of an action in passive constructions since they more directly highlight the concept of SOURCE, e.g. the preposition *od* with genitive or complex preposition *od strane* ‘by’ with genitive. However, prescriptive normative rules do not allow for this kind of usage; passive constructions are to be used when it is not intended to indicate the doer of an action, when the doer is not known or not relevant. More information on passive constructions in the Croatian language presented from the perspective of cognitive linguistics can be found in Belaj (2004).

3.2. PO + ACCUSATIVE

3.2.1. Spatial meaning

In its prototypical usage, the preposition *po* with the accusative case profiles spatial relation between a trajectory moving towards a landmark whose surface is the goal of the movement, as exemplified in (12). The concepts of MOTION and SURFACE are again to be identified as concepts on which basic spatial meaning of the preposition *po* is based. It is important to observe that movement of a trajectory in the accusative uses of the preposition *po* is directed – the trajectory moves toward the surface of a landmark. This directed movement, ablative movement to be more precise, is in contradiction with the basic spatial meaning of the preposition *po* when used with the locative case (and the locative spatial usage being more frequent and motivating more abstract usages encourages a presumption that this spatial meaning is closer to the semantic grounds of the preposition *po*). In previous paragraphs it was stated that movement designated by the preposition *po* can best be described as non-specified – it has no specific starting point or endpoint (movement in duration i.e. perlocative movement) and the shape of trajectory’s path is not indicated. This basic spatial meaning of the preposition *po* is not compatible with the accusative case since the meaning of this case is based on the concept of GOAL and therefore requires directed movement. Nevertheless, as seen in previous paragraphs, the preposition *po*, even when used with the locative case, has the ability to be used in contexts where movement seems directed, e.g. in examples (4a) and (4b) where the movement of the trajectory is conditioned by the nature of a landmark. In addition, as already stated, every movement evokes three concepts – SOURCE, PATH and GOAL – so even though the preposition *po* prototypically indicates only movement, i.e. its semantics is based on the concept of PATH, it also implies the concept of GOAL (in the same way it implies the concept of SOURCE and therefore can be used with the locative case to express the meaning of ‘cause’ in examples (9a), (9b) and (7c)). This and the aforementioned ability to be used in contexts where movements seems directed shows that the preposition *po* has semantic potential allowing it to be used with the accusative case. Whether two or more linguistic units will be used together directly depends on their semantic compatibility. Partial semantic compatibility of the preposition *po* and the accusative results in the fact that their combination can be used in ways which are rather limited – as it will be shown, *po* + *accusative* construction can express just three different meanings.

- (12) a) *Svako jutro idem po kruh i mlijeko u trgovinu u susjedstvu.*
 ‘Every morning I go to get bread and milk from the local store.’

The preposition *po* prototypically indicates movement in duration (perlative movement) and the accusative case indicates goal, i.e. final point of adlative movement. That results in the fact that examples such as in (12) are interpreted in the following way: a trajectory, upon reaching a landmark, takes or grabs that landmark and continues to move together with it (everyday experience implies that in such situations a trajectory is moving back to the place where it came from, e.g. the usual interpretation of example (12) is that the trajectory comes back home when he or she buys *kruh i mlijeko* ‘bread and milk’). This is a direct consequence of the semantics of the preposition *po*. On the one hand, the preposition *po* indicates movement in duration and therefore it is implied that movement does not finish when the trajectory reaches the landmark. On the other hand, the preposition *po* specifies the landmark as SURFACE. Reaching the SURFACE that is the GOAL, as indicated by the accusative case, means to distribute itself over it (it is already shown that the preposition *po* with the locative case indicates distribution on a SURFACE). Usually in expressions with the preposition *po* and the accusative case the landmark is a smaller and weaker object, such as *kruh i mlijeko* ‘bread and milk’ in example (12). For a human trajectory to be distributed over the surface of a landmark in this example means to take control of it, to place hands on it.

3.2.2. Non-spatial meanings

The meanings labelled ‘influence’ and ‘measure’ are peripheral manifestations of the prototypical meaning of the preposition *po* with the accusative case. A major difference between the prototypical meaning and the meaning of ‘influence’ and ‘measure’ lies in the fact that these two meanings do not require a verb that explicitly indicates movement. The meaning labelled ‘influence’ is presented in example (13) – a landmark is a goal over which negative effects of some action are distributed – to be distributed over some surface means to have influence over it (e.g. the basic human experience is that the book will be wet if we distribute water over its surface). Since we have no verb of movement, there is no implication that the action continues after the goal is reached, as it is the case with the ‘surface as a goal of movement’ meaning. The meaning labelled ‘measure’ is exemplified in (14a). Here we have a trajectory distributed over the landmark perceived as a measure or point on a scale (prices always go up or down the scale). This point on the scale is explicit in (14b). It has to be said that examples in (14) have a slight implication of ‘manner’ (as said before, ‘manner’ is always connected to the concept of PATH). In addition, prescriptive normative rules of the Croatian language require the usages of the preposition *po* with the accusative to convey ‘influence’ or ‘measure’ to be avoided and the preposition *za* with the accusative to be used instead (as in second part of example (13)). The basic meaning of the preposition *za* with the accusative case is ‘behind of as a goal’ – this meaning has the implication of FOLLOWING, and, as seen, the idea of FOLLOWING is present in the usages of the preposition *po* (Bacz (2002) goes as far to state that this is the basic concept that lies behind all usages

of the preposition *po*). The fact that the preposition *po* can be replaced with the preposition *za* when used with the accusative case to convey the same meaning, of course only in some situations, means that the peripheral parts of the semantic networks of these two prepositions overlap.

- (13) *To je loše po nas, a dobro za gradski proračun.*
‘That is bad for us, but good for the city’s budget.’
- (14) a) *Prodavači stare zalihe cigareta moraju prodavati po staroj cijeni.*
‘Vendors have to sell old supplies of cigarettes at the old price.’
- b) *Ne mogu prodati zemljište ni po 15 kuna po kvadratu.*
‘They can’t sell land even at 15 kuna per square meter.’

4. CONCLUSION

Table (3) summarises the findings on the semantic network of the preposition *po* presented in this paper (other analyses, of course, can put forward more or less detailed descriptions, depending on the purpose of the conducted analysis, but if they are to be considered plausible they all need to follow the same basic principle that presupposes the identification of the basic spatial meaning and the explanation of relations of all other meanings to this basic meaning – a goal this paper hopefully achieves).

basic concepts: MOTION + SURFACE					
accusative	spatial	movement on surface activity on surface distribution on surface spatial temporality	locative	spatial	surface as a goal of movement
	non-spatial	posteriority manner cause means		non-spatial	measure influence

Table 3: Meanings of preposition *po*

The preposition *po* is of inherently dynamic meaning and that is equally obvious in the locative as is in accusative uses. Furthermore, the relation that is profiled by means of the preposition *po* involves a landmark conceptualized as SURFACE and this too is equally obvious in the locative and accusative uses. Therefore it is possible to identify the basic super-schematic meaning of the preposition *po*. This meaning, the basis of all spatial and non-spatial locative and accusative uses, can be described as a schematic meaning profiling spatial relations between a trajectory and a

landmark, in which the landmark is in connection with the concept of SURFACE and the trajectory with the concept of MOTION. The locative and accusative case specify the concept of SURFACE differently. In the accusative usages a landmark, its surface, is specified through the concept of GOAL, while in the locative usages a landmark is specified through the concept of PLACE (movement occurs within bounded space). The specification of a landmark, i.e. the specification of the concept of SURFACE through the concepts of GOAL and PLACE, is conditioned by the case semantics (the usage frequency shows that the locative specification of landmark is closer to the basic meaning of the preposition *po* – that is the reason why only this meaning is shown graphically). This is yet another proof of the complexity of prepositional semantics and the complexity of preposition – case interface in languages such as Croatian – it is hard to discuss prepositional semantics without taking into account the meaning of case or cases with which a preposition combines (in addition, a preposition can form constructions that involve linguistic units other than cases; in such constructions the semantics of linguistic units other than cases needs to be taken into account when describing the semantics of a preposition). Nevertheless, identification of the concepts of SURFACE and MOTION as the common points of the accusative and locative usages of the preposition *po* shows that it is possible to identify the basic super-schematic meaning of a preposition, i.e. to identify the basic aspects of the meaning of a preposition, aspects of meaning that enable a preposition to combine with some cases and hinders combinations with other cases. The semantic compatibility between a case and a preposition directly influences the usage frequency and complexity of the semantic network, as the usages of the preposition *po* with the locative and accusative case discussed in this paper clearly demonstrate.

Findings presented in this paper highlight the fact that a preposition is always part of a construction. If a prepositional construction is to be properly understood and described, the semantics of all linguistic units forming that prepositional construction need to be accurately taken into account. Nevertheless, when discussing the semantics of any given preposition, it is necessary to always bear in mind that the emphasis needs to be on the preposition in question and on identifying the semantic properties which enable the preposition in question to occur within a specific construction, i.e. to combine with specific linguistic units.

LITERATURE

Alexander, Ronelle. 2006. *Bosnian, Croatian, Serbian, a Grammar: With Sociolinguistic Commentary*. Madison: The University of Wisconsin Press.

Anić, Vladimir, Dunja Brozović Rončević, Ivo Goldstein, Slavko Goldstein, Ljiljana Jojić, Ranko Matasović, and Ivo Pranjković. 2004. *Hrvatski enciklopedijski rječnik*. Zagreb: EPH, Novi Liber. <http://hjp.novi-liber.hr/>.

Bacz, Barbara. 1999. "Three-case prepositions in Polish: The semantics of PO." *LACUS Forum* 25: 137–147.

- B a c z, Barbara. 2002. "On the image-schema proposals for the preposition PO in Polish." *Glossos* 3: 1–19.
- B e l a j, Branimir. 2004. *Pasivna rečenica*. Osijek: Filozofski fakultet, Sveučilište Josipa Jurja Strossmayera u Osijeku.
- B e l a j, Branimir. 2008. *Jezik, prostor i konceptualizacija: shematična značenja hrvatskih glagolskih prefiksa*. Osijek: Filozofski fakultet, Sveučilište Josipa Jurja Strossmayera u Osijeku.
- B e l a j, Branimir. 2010. "Prostorni odnosi kao temelj padežnih značenja – shematičnost i polisemija hrvatskoga prijedložno-padežnog izraza od + genitiv." In *Sintaksa padeža: Zbornik radova znanstvenog skupa s međunarodnim sudjelovanjem Drugi hrvatski sintaktički dani*. Zagreb: Institut za hrvatski jezik i jezikoslovlje, Filozofski fakultet u Osijeku: 15–33.
- B r a l a - V u k a n o v i ć, Maja. 2009. "The story of 'o'. Force dynamics in the semantics of (Croatian) prepositions." In *Space and Time in Language and Literature*. Newcastle: Cambridge Scholars Publishing: 61–86.
- B r a l a - V u k a n o v i ć, Maja. 2011. "Where is o: Croatian prepositions as vectors." In *Space and Time in Language*. Frankfurt am Main: Peter Lang: 91–112.
- B r a l a - V u k a n o v i ć, Maja, and Anita M e m i š e v i ć. 2012. "Moving od- and do- in Croatian. An account of sources, goals and dual readings of the dative." *Jezikoslovlje* 13, 1: 41–69.
- B r u g m a n, Claudia. 1981. "The story of over". University of California, Berkeley.
- B u j a s, Željko. 1999. *Veliki hrvatsko-engleski rječnik*. 3rd ed. Zagreb: Nakladni zavod Globus.
- D e r k s e n, Rick. 2008. *Etymological Dictionary of the Slavic Inherited Lexicon*. Leiden: Brill.
- D i c k e y, Stephen M. 2012. "Orphan prefixes and the grammaticalization of aspect in South Slavic." *Jezikoslovlje* 13, 1: 71–105.
- V a n d e r G u c h t, Fieke, Klaas Willems, and Ludovic De Cuypere. 2007. "The iconicity of embodied meaning. Polysemy of spatial prepositions in the cognitive framework." *Language Sciences* 29: 733–754.
- I v e k o v i ć, Franjo, and Ivan Broz. 1901. *Rječnik hrvatskog jezika*. Vol. 2. Zagreb: Štamparija Karla Albrechta (Jos. Wittasek).
- J a n d a, Laura A. 1993. *A Geography of Case Semantics: The Czech Dative and Russian Instrumental*. Berlin – New York: Mouton de Gruyter.
- K u r z o n, Dennis. 2002. "'Preposition' as functor: The case of long in Bislama." In *Prepositions in their Syntactic, Semantic and Pragmatic Context*. Amsterdam, Philadelphia: John Benjamins Publishing Company: 231–248.
- L a k o f f, George. 1987. *Women, Fire, and Dangerous Things: What Categories Reveal about the Mind*. Chicago: The University of Chicago Press.

Langacker, Ronald W. 1987. *Foundations of Cognitive Grammar*. Vol. 1. Stanford: Stanford University Press.

Matovac, Darko. 2013. "Semantika hrvatskih prijedloga". Osijek: Sveučilište J. J. Strossmayera u Osijeku.

Moguš, Milan, Maja Bratanić, and Marko Tadić. 1999. *Hrvatski čestotni rječnik*. Zagreb: Zavod za lingvistiku Filozofskog fakulteta Sveučilišta u Zagrebu, Školska knjiga.

Raguž, Dragutin. 1997. *Praktična hrvatska gramatika*. Zagreb: Medicinska naklada.

Rauh, Gisa. 1993. "On the grammar of lexical and non-lexical prepositions in English." In *The Semantics of prepositions: from mental processing to natural language processing*. Berlin – New York: Mouton de Gruyter: 99–150.

Saint-Dizier, Patrick. 2006. "Introduction to the Syntax and Semantics of Prepositions." In *Syntax and Semantics of Prepositions*. Dordrecht: Springer: 1–26.

Sandra, Dominiek, and Sally Rice. 1995. "Network analyses of prepositional meaning: Mirroring whose mind – the linguist's or language user's." *Cognitive Linguistics* 6, 1: 89–130.

Silić, Josip, and Ivo Pranjković. 2005. *Gramatika hrvatskoga jezika za gimnazije i visoka učilišta*. Zagreb: Školska knjiga.

Skok, Petar. 1988. *Etimologijski rječnik hrvatskoga ili srpskoga jezika*. Vol. 3. Zagreb: Jugoslavenska akademija znanosti i umjetnosti.

Stolac, Diana. 2009. "Izražavanje prostornih značenja padežnim oblicima." In *Prostor u jeziku / Književnost i kultura šezdesetih: Zbornik radova 37. seminara Zagrebačke slavističke škole*. Zagreb: Filozofski fakultet u Zagrebu, Zagrebačka slavistička škola: 66–74.

Šarić, Ljiljana. 2003. "Prepositional categories and prototypes: Contrasting some Russian, Slovenian, Croatian and Polish examples." *Jezikoslovlje* 4, 2: 187–204.

Šarić, Ljiljana. 2006a. "A preliminary semantic analysis of the Croatian preposition u and its Slavic equivalents." *Jezikoslovlje* 7, 1: 1–43.

Šarić, Ljiljana. 2006b. "On the meaning and prototype of the preposition pri and the locative case: A comparative study of Slavic usage with emphasis on Croatian." *Rasprave Instituta za hrvatski jezik i jezikoslovlje* 32, 1: 225–248.

Šarić, Ljiljana. 2008. *Spatial concepts in Slavic: a cognitive linguistic study of prepositions and cases*. Wiesbaden: Otto Harrassowitz Verlag.

Šarić, Ljiljana. 2012. "The Croatian preposition uz: A cognitive approach." *Jezikoslovlje* 13, 1: 151–190.

Šonje, Jure (ed.). 2000. *Rječnik hrvatskoga jezika*. Zagreb: Leksikografski zavod Miroslav Krleža, Školska knjiga.

Taylor, John R. 1993. "Prepositions: Patterns of polysemization and strategies of disambiguation." In *The Semantics of prepositions: from mental processing to natural language processing*. Berlin, New York: Mouton de Gruyter: 151–178.

Taylor, John R. 1995. *Linguistic Categorization: Prototypes in Linguistic Theory*. 2nd ed. Oxford: Clarendon Press.

Tyler, Andrea, and Vyvyan Evans. 2003. *The Semantic of English Prepositions: Spatial Scenes, Embodied Meaning and Cognition*. Cambridge: Cambridge University Press.

Vince, Jasna. 2010. "Prostorni prijedložni izrazi u hrvatskom crkvenoslavenskom jeziku." *SLOVO* 60: 791–826.

Volk, Martin. 2006. "German prepositions and their kin." In *Syntax and Semantics of Prepositions*. Dordrecht: Springer: 83–100.

Zelinsky-Wibblet, Cornelia. 1993. "Introduction." In *The Semantics of prepositions: from mental processing to natural language processing*. Berlin, New York: Mouton de Gruyter: 1–26.

Corpuses:

Croatian Language Corpus, <http://riznica.ihjj.hr/>

hrWaC Corpus, <http://nlp.ffzg.hr/resources/corpora/hrwac/>

Croatian National Corpus, <http://www.hnk.ffzg.hr/>

ZNAČENJA PRIJEDLOGA *PO* U HRVATSKOM JEZIKU

U ovome radu razmatra se značenje prijedloga *po* u hrvatskom jeziku. Teorijski okvir rada je kognitivna lingvistika. U uvodnome dijelu rada donosi se kratak pregled teorijskih pretpostavki te se sažimaju prethodne spoznaje o značenju prijedloga *po*. Uočavaju se nedostaci opisa u suvremenim gramatikama i rječnicima. U središnjem dijelu rada opisana je značenjska mreža prijedloga *po* – utvrđeno je prototipno prostorno značenje utemeljeno na konceptima KRETANJA i POVRŠINE te je objašnjeno kako je to značenje povezano s ostalim prostornim i neprostornim značenjima. Sva tumačenja utemeljena su na detaljnom proučavanju primjera prikupljenih u korpusima hrvatskoga jezika i u istraživanju prevedenom među izvornim govornicima.

KLJUČNE RIJEČI: *hrvatski jezik, kognitivna lingvistika, prostorne čestice, prijedlog po, kretanje po površini, lokativ, akuzativ.*

