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OVER AND PREKO – AN IMAGE SCHEMA-BASED APPROACH TO CONTRASTIVE ANALYSIS**

Prepositions as a grammatical category are highly resistant to propositional definitions and as such they present a significant challenge not only for semantic analysis but also for in-class descriptions, each preposition generating a network of senses with no easily discernible core meaning. These factors contribute to a relative lack of theoretical frameworks devoted to prepositional meaning, preposition translation as well as effective methods via which they could be taught. This paper argues that a useful model for translation and teaching of prepositions can be derived from a revised form of Image Schema theory. For this purpose, a contrastive analysis of two prepositions – the English OVER and Serbian PREKO was performed, with the aim of demonstrating how Image Schema theory, with its inherent focus on universally understandable spatial scenes can easily account for divergent senses of translation-equivalent prepositions. Furthermore, the paper argues that the language-neutral medium of visual scene description provides a natural basis for a 'tertium comparationis', while also serving as a useful starting point for language teaching as it circumvents many of the problems inherent in propositional definitions.

Key words: image schemas, prepositions, contrastive analysis, cognitive linguistics

1.0 Introduction

A general feature of human language is the economy with which it can describe visual scenes – any one configuration of objects within a particular space can be described using a limited amount of linguistic elements and their combinations. A preposition such as ON can be used to describe an infinite number of actual spatial situations, regardless of the specific objects involved. Moreover, prepositions often possess senses that are metaphorically related to the main, physical sense, adding to an already complex network of sense relationships. Taken together, these two issues present significant obstacles for L2 learners attempting to learn the prepositional system of a foreign language, a fact which has not gone unobserved in the linguistic community, resulting in research that drew heavily from alternative methods of semantic analysis with image schema theory proving a

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particularly well-suited candidate for adaptation (KRISTEN AND GORDON 2012; LAM 2009; BOERS 1998).

Image schemas are re-descriptions of perceptual experience that serve as basis for the mapping of spatial structure onto conceptual structure. Within the framework of cognitive linguistics image schemas serve as an important link between physical experiences, perceptual information and particular linguistic constructions, language being one among many cognitive processes with which they are closely intertwined. Once applied to prepositional meaning, image schema theory analyses and groups individual senses of a given preposition along lines set by the underlying visual/kinetic scene. The visual nature of the underlying construct (or rather its visual representation) is suitable for a language-neutral explanation of prepositional senses, which, when paired with the notion of radial categories and metaphorical extensions, allows for a unified explanation covering not only the "physical" senses but also their metaphorical extensions.

The scientific suitability of a specific theory, however, is not a guarantee of pedagogical validity, as Lam (2009) observes. In a post-test questionnaire, participants of Lam's experiment reported that their comprehension of theory-derived explanations was incomplete, which Lam ascribed to the limited exposure to the new teaching method. The problem of suitability is not wholly contained to student feedback as a certain type of issue also occurs in the application of the theory itself – thus Boers and Demecheeler (1998) do not use an explicit pictorial representation nor *Lakoffian* features such as *contact* and *extension* nor do they specify *similarity/instance* links found in Lakoff (1987), Lam does not provide a complete schematic account of *por* and *para* and Lindstromberg (1996) provides teaching points without giving a prior analysis of the senses involved and their interrelationships. All authors assumed that the problematic senses would be those that exist in an L1 preposition but not in its L2 equivalent, but they did not provide a comparative account of the sense complexes underlying said observation.

The central argument of this paper is that the theoretical and practical issues that underlie the application of the image schema theory originate in two distinct areas – first, that the image schema theory as exemplified by Lakoff's analysis of OVER is a source of issues due to its unconstrained application (KREITZER 1997) and the large number of interrelated senses it produces. The paper argues that the method devised by Kreitzer (1997) is more suitable as it reduces the number of senses to a manageable number while also providing a clearer methodology to follow. Secondly, observing the pedagogical requirement that the analysis be employed in language teaching, the paper also proposes that a successful application of the theory is predicated on a systematic, contrastive account of L1 and L2 senses which would greatly simplify the process of comparison. The actual contrastive analysis will be performed on PREKO, a preposition in Serbian roughly equivalent to the English OVER, using Kreitzer's methodology of schematic levels. The aim of the analysis is to show how the use of an alternative image schema theory alleviates many of the problems associated with prepositional meaning, while also providing a practical *tertium comparationis* for contrastive language study.

More specifically, the analysis will be performed on a pair of translation-equivalent prepositions to showcase how the choice of a language-neutral medium such as mental imagery and associated cognitive representation can serve as a productive starting point

for the creation of highly detailed sense networks, which can in turn be compared and contrasted, offering a precise and predictive account of senses likely to cause difficulties to language learners. The expected result of this analysis is to arrive at such a network, while at the same time refining the method via which that network is obtained.

2.0 Theoretical Framework

Cognitive Image Schema theory is a theoretical framework developed by Lakoff (1987) and Johnson (1987), building off of Brugman (1981), which locates the meaning of prepositions in a host of related cognitive constructs termed image schemas. Image schemas differ from similar concepts such as those of *rich pictures* in that they are not only redescriptions of visual precepts but highly dynamic structures that also incorporate information from perceptual and bodily experiences. Their essential character is therefore both schematic and embodied, seeing as they are rooted in actual concrete experience (CLAUSNER & CROFT 1999). Image schemas are highly schematic, gestalt structures that nonetheless possess an internal structure and they are applied analogously across examples, providing meaning via similarity to a hypothesized, prototypical schema (JOHNSON 1987: 44). The application of image schemas can additionally be extended via the use of experientially-grounded transformations (GIBBS & COLSTON 1995). What exactly constitutes a full, stand-alone image schema remains a matter of debate, and the systems of analysis presented in this paper were chosen for the degree of influence they exerted over the field, with the most influential being the one given by Lakoff (1987).

2.1 Previous applications of image schema theory

Prepositions have a wide variety of senses which can be roughly divided into literal senses, generally found in sentences denoting spatial relationships between objects, areas and surfaces and metaphorical senses, encountered in fixed expressions and collocations. Thus, a sentence such as *He walked over the hill employs* a literal sense of OVER, which in this case tracks the movement of an unspecified he, theoretically abstracted as the trajector, over a topographical area, similarly abstracted as the landmark. A metaphorical sense, by way of contrast, operates by taking image schemas as input and using a particular sense to describe a more abstract domain (LAKOFF 1987: 435). A collocation such as TO GET OVER SOMEONE, functions by taking the sense of OVER described previously and applying it to the more abstract domain of human emotion, the result being a collocation that links emotional effort needed to forget a dear person with the physical effort needed to traverse a mountain or a hill. The senses of prepositions are highly sensitive to the subject of the sentence as well as the object of the preposition – two of the senses of OVER described by Lakoff, the COVERING sense and the MULTIPLEX covering sense are brought about by a difference in subject and the inclusion of a quantifier which transforms the image schema of two closely touching surfaces, as exemplified by *The board is over the hole*, into the image schema of a multitude being spread over a surface, as exemplified by *The soldiers were posted all over the hill.*

This division of senses is not by any means the only possible one. Linguistic theories preceding and anteceding cognitive semantics lack much of the connective tissue

between individual senses and collocations, a theoretical aspect often seen as lacking in the so-called traditional and collocational approaches to preposition teaching (LORINTZ & GORDON, 2012). Research done on the topic published in Serbian also displays this division, with general grammar books such as Lompar (2016) discussing syntactical and general semantic properties through categories such as "place", "time", "cause", etc. Conversely, authors such as Klikovac (2006) use theories sourced from cognitive linguistics. Applications of image schema theory, prototype theory and cognitive metaphor theory all emerged as a response to increase teaching effectiveness.

For example, Lindstomberg (1996) employed prototype theory in order to provide a unified framework which could account for individual prepositional senses, contrasting such an approach against those which construe words as having a single, general meaning and those that construe certain words as having no meaning, being "delexicalized" and possessing only abstract, grammatical meaning. Lindstromberg argues against both approaches, observing that ELT coursebooks either present a narrow selection of prepositional senses, or, apropos "delexicalization", present entire collocations. Prototype theory (and implicitly image schema theory) forms the core of Lindstomberg's Learning Points, a collection of pedagogical suggestions that make use of the sense network provided by Brugman/Lakoff. It is of note here that Lindstromberg does not systematically account for the meaning of ON with individual senses being assumed and theory-derived knowledge providing organizational/illustrative guidance – learning points are organized according to the assumption that some senses are more typical and basic than others and illustrations often employ image schema-inspired graphical representation. Although individual learning points are often accompanied by explanations sourced from the cognitive paradigm, no overall network of senses emerges.

Boers and Demecheeler (1998) also approached the issue of preposition meaning from a decidedly pedagogical perspective – prepositions are, Boers and Demecheeler argue, sources of interference in second-language acquisition stemming from translation-equivalent prepositions having shared but also non-overlapping senses and metaphorical extensions. The cognitive semantic paradigm was consequently employed with the goal of creating a unified analysis which would facilitate accurate predictions of interference, a springboard to be used in teaching. The resultant analysis of BEHIND, BEYOND and their French equivalents consists of an overview of individual senses, their comparison with L2 equivalents and a series of follow-up experiments designed to test the validity of generated predictions. The analysis was performed in a manner similar to that of Lindstomberg (1996), progressing through individual senses and noting metaphorical extensions where they were present, albeit with a larger focus on individual senses, which are listed in no particular order, lacking "instance" and "similarity" links used by Lakoff (1987) to tie individual senses together.

Studies dealing with similar subject matter i.e. pedagogical application of the cognitive paradigm such as Lam (2009) and Hung et. al. (2018) also display a similar tendency in dividing and organizing senses according to the tenants of prototype theory without providing an analysis (image schematic or otherwise). An overview of similar research provided by Boers (2011) illustrates a similar methodological bias – researchers commonly opt for prototype theory and cognitive metaphor theory while image schematic ap-

proaches are rarely employed.

The reason behind these methodological choices is unknown, although a provisional suggestion can be given at the expense of the theoretical frameworks employed in the research here described – the observed lack of concrete semantic analysis is a byproduct of frameworks that by themselves cannot provide it – typicality ratings used as basis for defining senses/items as typical/less typical are obtained via experimental procedures, with the ratings giving no insight into why a certain item is deemed more or less typical. As it stands all claims about typicality of certain senses given in the papers are unverified. Cognitive metaphor theory can explain the source/target mappings across domains, but it cannot provide an analysis of individual senses nor their connections.

To remedy this issue, it will be argued that an approach based on the use of image schema theory can provide an explicit sense network and a clear, language-neutral point of comparison between translation-equivalent prepositions. As to the actual shape of such an approach, there are several arguments to be made against the oft-referenced, Lakoff-inspired approach.

2.2 A Kreitzer-inspired approach to image schema analysis

The Lakoffian approach to prepositional meaning has been criticized on several grounds, with central issues being the large theoretical footprint caused by the use of features and the unconstrained use of notions such as instance/similarity links. More specifically, the image schema theory as employed by Lakoff (1987:416-461) has been criticized for employing specifications that behave similarly to distinctive features, contrary to claims that schemas are primarily analogous structures. The use of image schema specifications is also tied to the use of instance/similarity-links, which form the basis of the network linking different senses of OVER together (KREITZER 1997). To illustrate the Lakoffian approach and subsequent criticism, consider its application to the analysis of OVER.

Lakoff analyses prepositional senses by extracting information from sentences containing prepositions, more specifically, by extracting information from the subject, the verb and the object of the preposition. A singular sense is considered to be standalone when it allows for specific informational configurations to be used grammatically. For example, the prototypical sense of OVER, the so-called *above-across* sense is characterized by an image schema consisting of a moving trajector (the subject of the sentence) and a static landmark, with the actual movement being performed upon or above the landmark. This is the image schema that structures sentences such as *The bird flew over the hill* and *The plane flew over the field*.

This central, or prototypical sense, cannot account for all possible configurations of sentence-derived information, requiring expansion/recognition of different but related schemas. This is best demonstrated by contrasting a sentence such as *Mike lives over the wall* with a sentence such as *Mike lives over the hill*. The first example sentence, if at all grammatically possible, contains a sense of OVER which is understood as "being directly above", in contrast to the second sentence where OVER means "beyond" or "on the other side of". Lakoff attributes the grammaticality of the second example to information contained in the object of the preposition – the landmark in the second sentence extends horizontally in space, a feature which, Lakoff argues, allows focus to be placed on different

sections of the landmark, performing an endpoint focus transformation. Conversely, the landmark in the first sentence possesses only vertical extension, prohibiting it from taking end-point focus. In Lakoff's sense network, the endpoint-capable OVER is linked with the prototypical sense via an instance link and with related senses via a similarity link. Prototypical meanings, distinctive features such as vertical/horizontal extensions along with image schema transformations and metaphorical extensions all serve as sources of individual senses, totaling 24 senses altogether.

Critique levied against Lakoff's analysis has focused primarily on the means through which kinship of senses is established i.e. instance/similarity links and the feature system introduced previously, with image schema specifications receiving special attention. Dewell (1994) echoing Vandeloise (1990) argues that image schema specifications behave very much like distinctive features, observing that the claimed, singular gestalt of OVER often "disappears in a formula like ABV.NC.XP[...]". On a similar note, Kreitzer (1997) observes that because Lakoff considers senses derived from image schema transformations to be standalone, the resultant image schemata cluster is unnecessarily complex. Kreitzer goes one step further to suggest that the features introduced to account for senses of OVER which can take an end-point focus are unnecessary, arguing that the grammaticality of end-point focused sentences containing vertically extended landmarks such as *The cat is already over the fence* is a strong argument for the omission of image schema specifications.

In order to address this problem Kreitzer postulates three levels of schematization – the component level, the relational level and the integrative level. The component level represents the simplest level of schematization, allowing for the objects of a spatial scene to be represented as surfaces, points of mass and lines. Alternate construals and image schema transformations occur at this level. The relational level of schematic structure is the level on which component schemata are combined into specific spatial relationships. It is at this level that the senses of individual prepositional senses are defined, with a single sense being identified with a particular relational image schema. The third, integrative level is structured by multiple image schemas combined into a single entity. This level represents the resultant static configurations of dynamic processes represented by a verb. By clearly defining complexity levels and tying transformations/alternate construals to the component level, Kreitzer's system allows transformations to be registered as extensions of a particular sense but not as stand-alone senses. Such a shift reduces the number of total senses, Lakoff, in his discussion of OVER, proposes a number of schema transformations grounded in the human bodily experience, one of which bears the name of *multiplex-mass* transformation. The *multiplex-to-mass* transformation is a cognitive re-description of a common human experience, in this case, the phenomenon of a group of objects appearing as a single entity when perceived from a distance. It is this transformation that allows certain objects to be construed either as a single entity or a mass of many, with the sentence pair *There is sand all over the floor* and *There is sand over the floor* being an example of such a transformation.

As Lakoff's system does not feature schematic levels, the transformation which turns *all over* into *over* is conceptualized as operating on the entire schema, producing a new, separate sense. In contrast, because Kreitzer confines transformations to the compo-

nent level, the *multiplex-to-mass* operation does not create a new sense but simply extends the sense of the relational schema by replacing a multiplex object ("sand all over") with a planar object ("sand over") while keeping the overall relational schema unchanged.

Similarly, because the relational level is the basic level of granularity at which individual senses are defined, features are no longer needed as their presence fails to produce a difference in meaning – Kreitzer argues that, for example, a feature such as *contact* is irrelevant as there is no context in which it brings about a change in grammaticality and thus *The man jumped over the wall is* equally valid as *The man climbed over the wall*, with the same considerations holding for *vertical* and *horizontal* extension.

In total, Kreitzer's system effectively reduces the number of individual senses by eliminating schema features while retaining and re-contextualizing transformations, ultimately preserving the descriptive core of Lakoff's proposals and creating a fully analogous system. A full description of that system is beyond the limited scope of this papers, relevant details will, however, be introduced as the analysis moves forward. For a full description see Kreitzer (1997).

3.0 Contrastive Analysis of OVER and PREKO and their image schemas

3.1 Preliminary remarks

Contrastive analysis is primarily concerned with L1 to L2 transfer, with transfer being understood as the transfer of formal features from an L1 to an L2 utterance (JAMES 1981:14). This transfer can take the form of several transfer paradigms; with the relevant being the use of structures that employ identical formal devices for different communicative purposes and the use of different formal devices for the same communicative purpose (JAMES 1981: 14-17). Applying that logic to the process of learning prepositions, several forms of transfer are possible. First, a learner might use a preposition that, although sharing the central sense, might possess senses that are not entirely overlapping, leading to over-extension. Secondly, as a consequence of over-extension, learners will not be aware that a particular sense found in the L1 preposition is actually contained in a completely different L2 preposition altogether. The purpose of a contrastive prepositional analysis is to identify those senses that are overlapping and those that are not.

Re-stating this goal in image schematic terms, a contrastive analysis of prepositions should provide an inventory of relational-level image schemas as they are found in L1/L2 prepositions, identifying shared image schemas and those attached to other prepositions. A full inventory could then be used to predict problematic senses.

The analysis here performed starts from the following assumptions. First, that the analyzed prepositions share some, but not all senses, making the focus of the analysis discovery of those senses that are absent. The partial translational equivalence of OVER and PREKO was established using a set of online dictionaries, assuming that an L1 Serbian speaker learning English would probably learn OVER as the closest L2 equivalent of PREKO (*Srpsko-Engleski Rečnik Krstarice, onlinerecnik.com, Englesko-srpski prevodilac*). Secondly, L1/L2 senses are equivalent if and only if a single relational-level schema can describe both of them. On the level of actual sentences, this means that an image-schema must be capable of being instantiated in paired L1/L2 sentences that are as similar as pos-

sible with regards to the nature of the trajector, the landmark and the status of the static/ dynamic relationship. Finally, although the starting point for the analysis is OVER, it is assumed that the direction of description is ultimately unimportant; it matters not whether the description starts from L1 senses or L2 senses as the aim in both cases is the acquiring of a full inventory of senses. The senses of OVER are adapted from Kreitzer (1997) and the senses of PREKO are the result of novel analysis. Sentences in Serbian that are not direct translations of English sentences were taken from the Corpus of Contemporary Serbian (VITAS & UTVIĆ 2013).

3.2 The *above* sense or Over$_1$

The preposition *over* has a static sense commonly referred to as *over$_1$* or the *above* sense – taking two component-level objects and placing them one above the other. This image schema is instantiated in sentences such as *I put the picture over the fireplace*. Although the sentence contains a dynamic verb, and consequently a path this does not yield a dynamic sense – this is due to the fact that truly dynamic schemata take paths and objects as components, the example sentence rather integrates a static relational schema, *the picture over the fireplace* with a path schema, *I put*, resulting in an integrative-level schema that highlights the results of a dynamic action that is concluded at the moment of utterance, leaving behind a static relational schema. Also of note here is Kreitzer's observation that the relational schema specifies proximity – only when the location of both the trajector and the landmark is known can this sense of OVER be grammatically used, rendering sentences such as *There are helicopters somewhere over us* impossible.

The Serbian *preko* lacks this sense, as the equivalent sentence *Stavio sam sliku preko kamina* produces a covering sense of over, in which the trajector and landmark are understood as being in close proximity, with the trajector covering the landmark. This specific sense in Serbian is contained in the preposition *iznad* (Eng. *Above*), with examples such as *Stavio sam sliku iznad kamina* containing the relational image schema closest to *over$_1$*. As it stands, the preposition *preko* lacks a static relational schema that positions objects on a vertical axis – when *preko* takes two component objects it positions them one closely to the other, a state of affairs best described as a covering relationship. It is the preposition *iznad* that contains the vertical alignment necessary for the appearance of *over$_1$*'s relational schema.

3.3 The *across* sense or Over$_2$

The second major sense of over is known as the *across* sense. As the name suggests, the *across* sense on the relational level takes a path schema and an object schema as components and positions them along a vertical axis, with the trajector moving across the boundaries of the landmark. The schematization of the landmark is non-specific and the nature of the landmark does not affect the overall relational schema: *The man jumped over the stump*, *The man jumped over the wall* and *The man jumped over the lake* are all equally acceptable even though the schematizations of the landmarks differ.

At the relational level *over$_2$* is characterized by three dimensions – two forming a horizontal plane with the additional third dimension being a vertical axis emerging from

it. The path must cross the boundaries of the three-dimensional object or the vertical plane of the landmark if the landmark is one or two dimensional. The Lakoffian *contact* specification is unneeded as there are no contexts where it changes the grammaticality of an utterance. The English language possesses several transformations which extend the applicability of *Over$_2$* by operating on the components of the schema: the OD-trajectory → lD-trajector and the path focus → endpoint focus transformations. Of note here is Langacker's notion of subjective motion, Kreitzer's *obstacle* construal and metonymic extension, as all three extend the applicability of the schema without necessarily being transformations in the traditional sense.

First, the OD-trajectory → lD-trajector transformation extends the applicability of the schema by operating on the trajector and its associated path and fusing them into a single linear trajector. This is what allows sentences such as *The bridge stretches over the gorge* and *The power line runs over the field* to use dynamic verbs even though the trajectors are not physically moving, they simply are. The static extended trajector is conceptualized as moving due to the transformation, which in turn allows for the use of the inherently dynamic *Over$_2$* schema. The second of the two transformations also operates much in the same way with the path focus → endpoint focus transformation changing the profiling of the trajector without altering its relation with the landmark. Thus *The cat is already over the fence* and *John lives over the hill* are valid regardless of the static configuration of the verb as the path component is still there, albeit hidden due to the shift in trajector profiling. In both cases the focus is on the endpoint of a hypothetical path, be it an actual path of the first sentence or the subjective, imagined path of the second. This imagined path is a by-product of *subjective motion*, which encodes motor movements accompanying an act of perception into the conceptualization of a schema - the motions of the eyes and the head needed to follow a trajector over a hill are included as a motor schema in the *Over$_2$* schema, which is what ultimately provides the *path* component present in examples such as *The road goes over the hill* even though the trajector is incapable of movement.

Obstacle construal and metonymic extensions are two further methods of extending the applicability of *Over$_2$* that are not, strictly speaking, transformations. For example, some configurations such as *The wagons traveled over the desert*, *I made it over the river* and *We drove over some rough terrain* do not employ the vertical dimension stated to be the common to all relational schemas of this specific sense, inviting the argument that the vertical axis is unnecessary. Kreitzer, echoing Talmy, argues that the grammaticality of these sentences is found in the construal of the landmark – all examples here presented employ landmarks that hinder the progress of the trajector in some way, requiring an exertion of force to be traversed. Such a construal of the landmark allows for a parallel to be drawn – just as a desert requires force to be crossed so does a hill. This similarity allows for the use of *Over$_2$* in cases where the landmark is not vertical, provided that the landmark is construed as an obstacle. Finally, one particularly interesting extension of the *Over$_2$* sense is exemplified by sentences such as *I drove over the bridge*, where the landmark lacks a vertical extension and no obstacle construal is possible. Cases such as these are enabled by a metonymic relationship between the landmark and another, non-present but implied landmark that serves as the real target of traversal. This hidden landmark, in the example above assumed to be the river or the cliff underneath the bridge, is the actual object that

the trajector crosses over. Because crossing the bridge entails moving over the depression underneath it, this specific use of over$_2$ is grammatical.

To summarize, the basic relational schema of Over$_2$ positions a path/trajector component above a landmark in such a way that the path starts and terminates beyond the boundaries of the landmark. This core relational schema can be extended via the OD-trajectory → lD-trajector and the path focus → endpoint focus transformations as well as miscellaneous component alterations such as obstacle construal and metonymic extension, resulting in flexibility in the application of the schema.

The Over$_2$ sense of the preposition OVER has as its closest equivalent Preko$_1$, which possesses an identical relational-level schema, placing a path component over a landmark consisting of a two-dimensional planar/three-dimensional object and an attached vertical axis. It will later be argued that with Preko$_1$ the vertical requirement is much more lax than the one in its English equivalent, but for now it is enough to observe a lack of specificity with regards to the landmark, with *Skočio je preko panja*, *Skočio je preko zida*, *Skočio je preko jezera* all being grammatical constructions. The vertical axis extending upwards from the landmark projects a vertical boundary necessary for no-contact uses of PREKO – *Ptica je letela preko polja*, *Avion je prešao preko planine* etc.

This basic relational schema can also be extended via the OD-trajectory → lD-trajector and the path focus → endpoint focus transformations, which similarly operate on the components of the schema to extend its use. The OD-trajectory → lD-trajector transformation in Serbian is commonly instantiated through dynamic verbs such as *protezati se* (to extend), commonly encountered in configurations such as *Most se proteže preko reke*, and *prolaziti* (to cross over), seen in constructions such as *Sve metalne žice koje prolaze preko tovarnih prostora […] moraju imati uzemljenje*. In both examples a dynamic verb is used even though the trajector is not actually moving. The endpoint focus is also possible with PREKO, underlying examples such as *Mačka je već prešla preko ograde* i *On živi preko brda*, preserving the ability of Preko$_1$ to represent the end points of actual, traversed paths as well as subjective paths.

In contrast to the essential nature of obstacle construal for the grammaticality of sentences employing Over$_2$ and a flat planar landmark, Preko$_1$ lacks this option altogether as it is unnecessary – all planar landmarks, regardless of contained force dynamics, are perfectly acceptable as long as the landmark entry and exit condition is met. This is best demonstrated by the fact that a sentence such as *He crossed over the street* is automatically interpreted as containing a path above the actual street, while the sentences' Serbian equivalent *On je prešao preko ulice* lacks this interpretation, being closer in meaning to *across*. While configurations such as *Karavan je prešao preko pustinje* and *Vojnici su prešli preko njive* certainly echo examples used to illustrate the necessity of obstacle construal in English, the fact that planar landmarks lacking force dynamics are equally acceptable means that the verticality requirement of Over$_2$ does not hold for Preko$_1$, which in this aspect is similar to the meaning of *across* in English.

Consequently, the metonymic relationship argued to be the source of sentences such as *He drove over the bridge* is no longer essential for Preko$_1$ as the verticality requirement no longer holds – Kreitzer argued that the source of applicability of Over$_2$ in this particular case was the fact that the landmark *bridge* actually hides a much bigger landmark,

namely, the linear depression underneath it. Because there is a significant vertical length separating the bridge from the bottom of the linear depression, it is this length that provides the vertical requirement emblematic of $Over_2$. $Preko_1$ possesses a vertical dimension, but the traversal need not happen along it. Appropriately, metonymy can but need not be the factor that contributes to the grammaticality of *On je prešao preko mosta*, as it can be argued that the landmark *most* (engl. bridge) is construed simply as a two dimensional planar object, echoing again the meaning of *across*.

In summary, $Over_2$ and $Preko_1$ possess relational schemas that are similar yet distinct. Whereas $Over_2$ requires verticality to be present in the path component traversing the landmark, necessitating obstacle construal for the use of planar landmarks, $Preko_1$ is much less strict, allowing for grammatical uses of planar landmarks (with or without force dynamics) and three-dimensional landmarks, with the path component positioned vertically above the ground plane or directly on it. $Preko_1$ therefore resembles both $Over_2$ and *across*.

3.4 The covering sense or $Over_3$

The last of the literal senses is known as the covering sense or $Over_3$. It consists of two component level schemata, positioned in such a way so that the trajector hides the landmark from view. The direction from which the gaze is cast is known as the deictic center, with the ego being the default. This sense is exemplified by sentence configurations such as *The blanket is over the bed*, *The tablecloth is over the table* and *The mask is over my face*.

The main extension of $Over_3$ comes in the form of the multiplex-mass transformation, first introduced by Lakoff. This specific transformation allows a collection of many discrete entities to be construed as a single planar object. Applied to $Over_3$, this transformation allows a collection of discrete objects to serve as the trajector component, obscuring the landmark from view. Crucial for the transformation is the presence of quantifiers such as all/entire in the sentence containing the preposition, resulting in examples such as *There are spiders all over the ceiling*, *He has scars over his entire body* and *We have walked all over the city*. The transformation of the component schema occurs before the relational schema is composed, as it is necessary for the group entity to be conceived as a single unit before it can attain its obscuring role.

The Serbian preposition PREKO possesses a sense that is identical to the untransformed sense of $Over_3$, taking two components and positioning them so that the trajector hides the landmark from view. Sentence employing $Preko_2$ are identical to their English counterparts, with *Ćebe je preko kreveta*, *Stolnjak je preko stola* and *Maska mi je preko lica* being word-accurate translations. $Preko_2$ differs in one crucial regard from $Over_3$, however, as it cannot be extended via the multiplex-to-mass transformation. More specifically, when the transformation occurs the newly-formed mass trajector does not become a singular plane that obscures the landmark but a unified collection of objects that is superimposed onto the landmark. As a result, sentences in Serbian containing a multiplex-to-mass transformation such as *Pauci su svuda po plafonu*, *Ima ožiljke po celome telu* and *Hodali smo svuda po gradu* use the preposition PO, resulting in a different relational level schema. It should be noted, however, that the applicability of the transformation is to

a certain extent contingent on the nature of the trajector, as the sentence *Ima ožiljke preko celog tela* is intuitively much more acceptable than *Pauci su preko celog plafona* or *Hodali smo preko celog grada* (*preko celog* being here understood as *across the whole* rather than *all over*), lending some support to the notion that the obscuring function of $Preko_2$'s mass trajector is dependent on the nature of the original multiplex object – with two dimensional, static and spread-out trajectors being better at hiding the landmark than a mass of small, moving objects. To conclude this segment, $Preko_2$ and $Over_3$ share the same relational level schema, while differing in extensional possibilities – because $Preko_2$ possess a relational schema that is more selective when it comes to what exactly constitutes obscurement, with the multiplex-mass transformation licensing the use of the preposition PO. The transformation is still possible with multiplex objects that are two-dimensional in nature.

Summarizing the results of the analysis, OVER and PREKO are corresponding but not exact prepositions. The intuitive translation equivalency of the pair rests on the shared relational schema $Over_2=Preko_1$, with one additional corresponding and one non-corresponding sense. As showcased by the analysis, the corresponding senses have subtle differences in the way in which they construe objects, with the nonobligatory vertical axis of $Preko_1$ and the planar object requirement of the multiplex-to-mass transformation being the crucial differences between the two.

3.5 Pedagogical application

Returning once more to the applicability of image-schema theory to language teaching, one of the main benefits of Kreitzer's system is that, once analysis is performed, it can be summarized and adapted into quick heuristics for classroom use. Performing a summary of the analysis is easy enough, as the system produces a relatively limited amount of senses:

$Over_1$ = "Iznad"
$Over_2$ = $Preko_1$ (minus the verticality requirement)
$Over_3$ = $Preko_2$ (minus the multiplex-mass transformation sense when applied to groups of individual, three dimensional objects)

When the list is applied to a hypothetical language teaching/learning situation, it becomes possible to generate predictions of interference, namely, it is safe to assume that Serbian speakers learning OVER would 1) face difficulties with $over_1$, replacing it wholesale with *above*, 2) face difficulties recognizing that $over_2$ requires the landmark to be construed as an obstacle in order for $over_2$ to be used in its proper sense and 3) face difficulties recognizing the fact that $over_3$'s trajector can consist of a group of three-dimensional entities united via the multiplex-mass transformation. Similar analysis can also be performed for English speakers learning Serbian, but this should not distract from the fact that proper care should be taken to translate linguistic knowledge into salient pedagogical instruction regardless of direction. It is not unwarranted to observe that Kreitzer's system can also prove to be useful here, as the use of schematic levels renders the creation of meaningful teaching instructions much simpler – precise instructions can be created much more easily once the full list of similarities and differences has been established. In contrast to Lakoff's system, Kreitzer's schematization levels simplify the analysis significantly without

eliminating the descriptive power and imagistic character of the original system.

4.0 Conclusion

Within the theoretical framework of cognitive linguistics image schema theory emerged as a way of explaining how dynamic and abstract re-descriptions of bodily experience and perceptions factor in language use. Researchers working within this framework sought to provide image schematic explanations of lexical semantics which would account for both literal and metaphorical uses. The system as presented by Lakoff (1987) tied prepositional senses to specific image schemas, arguing that the encountered multiplicity of uses can best be explained using a handful of image schemas and their associated extensions. Because image schemas are capable of being rendered visually (to a certain degree), the theory provided a suitable starting point for the creation of alternative method of teaching. Research on the application of image schema theory to teaching displays a reluctance to engage with the specificities of sense networks, which, this paper argues, is a direct result of the original system's lack of constraint and large theoretical footprint.

Arguing further that successful learning and teaching can occur only in cases where the sense networks of two compared prepositions are known in advance, Kreitzer's system was introduced with the aim of modifying and adapting the original system to make it more manageable. Operating along the fault-lines of the original system, the introduction of schematization levels worked to reduce the number of individual senses while preserving the scope.

The two prepositions included in the analysis, PREKO and OVER, were selected with the express goal of demonstrating how schematic levels and explicit localization of transformations yields precise descriptions of senses and the rules governing their use. The sense network attained via the use of schematization levels proved descriptive and predictive – descriptive in its ability to isolate the relational schemas responsible for the intuitive translational equivalence of OVER and PREKO and predictive in its ability to identify unique sense and extensions likely to cause problems for learners. In that regard the system served its purpose, providing a clear measure of equivalency: PREKO and OVER are roughly corresponding prepositions, with a two shared relational image schemas that differ in fine details. The two relational schemas, referred to previously as the over-across sense and the covering sense, serve as the basis for translation-equivalence with the differences in individual senses being the source of possible transfer.

This, however, should not obscure the validity of Lam's observation that theoretical frameworks do not function immediately as useful pedagogical tools. Future efforts should be directed at solving this issue as well as simplifying and formalizing the procedure. As it stands, even with the use of schematization levels, the analysis is quite cumbersome and subject to individual interpretation. A simplified formal system would benefit both the educator and the linguist as it would allow for a quick extraction of valid teaching instructions while also partaking in Kreitzer's call for a cross-linguistic investigation of schematic levels.

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OVER И *ПРЕКО* – ЈЕДАН ПРИСТУП КОНТРАСТИВНОЈ АНАЛИЗИ БАЗИРАН НА ТЕОРИЈИ СЛИКОВНИХ СХЕМА

Предлози као граматичка категорија отпорни су на пропозиционалне дефиниције и као такви представљају озбиљан изазов како семантичкој анализи тако и описима унутар саме класе, где стање ствари додатно компликује чињеница да сваки предлог са собом доноси целу мрежу могућих значења где ни за једно се не може лако рећи да је „централно". Ови фактори заједно утичу на то да постоји мањак теоретских оквира који се баве значењем предлога, њиховим преводом као и ефективним методама њиховог учења. Овај рад предлаже да теорија сликовних схема (енг. Image Schema theory) уз одређене модификације може понудити валидан модел за анализу значења предлога као и њихово ефикасно учење у контексту учионице. У ту сврху је модификован модел теорије сликовних схема искоришћен као основа за контрастивну анализу енеглеског предлога OVER и српског предлога ПРЕКО, са циљем да се покаже како теорија сликовних схема са својим фокусом на универзално разумљиве просторне сценема може лако објаснити различита значења предлога који су на први поглед блиски еквиваленти. Идући један корак даље, рад ће такође настојати да покаже како метод описа визуелних сцена може послужити као природна основа за „tertium comparationis" и корисна основа за учење језика с обзиром на то да избегава многе проблеме који су инхерентни у пропозиционалним дефиницијама.

Кључне речи: шеме слика, предлози, контрастивна анализа, когнитивна лингвистика