

Pro- in Two Semantic Networks (A Comparative Study of English and Bulgarian)¹

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Abstract: *The prefix pro- is found in different languages of Indo-European origin. It has given rise to a number of prefixes and prepositions in these languages. The present article aims to construct the semantic networks of pro- in English as a representative of Germanic languages and Bulgarian as one of the South Slavic languages and to find some intersections and variations. Most studies devoted to prefixes focus on their function as aspectual markers and do not consider their semantic contribution when they are associated with verbs. By analysing the prefix pro-, this research tries to show that prefixes also play a very important role in the semantic structuring of space. As the data reveal, pro- is more productive in Bulgarian than in English, as it combines with more varied types of base verbs. Therefore, it has developed a more branched semantic network.*

Keywords: *spatial semantics, prefix pro-, English, Bulgarian, semantic networks*

1. Introduction

The significant role of prefixation in aspectual morphology has been emphasized in the studies dealing with verbal aspect. Aspectual morphology in the Slavic languages is realized by a set of morphological processes which the languages use in deriving perfective verbs from imperfective ones and imperfectives from perfectives. In most cases, the prefix attaches to imperfective verbs to form perfective verbs. For example, in Bulgarian, it is possible to change the aspect of a verb by the addition of the prefix *pro-* (e.g. imperf. *byagam* ‘to run’ vs perf. *probyagam* ‘to run out to’), but it is also possible to form secondary imperfectives form perfectives with the help of the suffix *-va* (e.g. perf. *probyagam* ‘to run out to’ vs imperfective *probyagvam* ‘to be in the process of running up to’). The following examples illustrate the difference in the use of an imperfective verb (e.g., *cheta* ‘read’) and the corresponding perfective verb (*procheta* ‘read through’) formed by adding the prefix *pro-* to the former:

(1) Az ne *cheta* chuzhdi pisma!²

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- I NEG read other people's letters
'I don't read other people's letters!'
- (2) Shte gi *procheta* dovechera i ste podgotvya otgovora
utre zaranta.
will them pro-read tonight and will prepare answer-Art.
tomorrow morning
'I will read them tonight and prepare the answer tomorrow morning.'

In this article we do not discuss secondary imperfective verbs in Bulgarian, only primary imperfectives and the perfectives derived from them via the prefix *pro-*, as well as the English regular verbs formed with the prefix *pro-*.

The prefix *pro-* is not among the widely discussed preverbs in linguistic literature although a lot of research has been devoted to prefixation. Previous studies on Slavic verbal prefixes focused on *za-* (Dickey 1999, Nedelcheva 2010, Endresen, Sokolova 2017); *do-* (Nedelcheva, S., Šarić 2022); *s-/z-* (Dickey 2005); *po-* (Dickey 2011; 2012); *na-* (Nedelcheva 2007, Šarić 2013); *nad-* (Mitkovska and Bužarovska 2012); *od-/ot-* (Šarić and Tchizmarova 2013); *o(b)-* (Šarić and Nedelcheva 2015), and *u-* (Šarić and Nedelcheva 2018). Regarding *pro-*, Stosic (2007) studies this prefix in Serbian in relation to the semantic structuring of space, more specifically how it affects different semantic classes of base verbs, their syntactic environment, as well as the semantic constraints on the nature of selected objects and the relationship between the spatial and the aspectual meaning of the prefix *pro-*. In Bulgarian few studies deal with the spatial meaning(s) of prefixes, most of the studies dealing with prefixes focus on their aspectual role and grammaticalization (Bratanova, 2020)³. This research tries to show, by analysing the prefix *pro-*, that prefixes also play a very important role in the semantic structuring of space. The fact that the meaning of the prefixed verb is significantly distinct from the meaning of the base form is illustrated by the case of the motion event described by the derived verb *probyagam* which means 'to run out to', the prefix expresses the "path" (Talmy 2000), and the base form (*byagam* 'run') expresses the "manner of motion" (ibid.).

- (3) Bărzo i bezshumno *probyaga* do podnozhieto na
mogilkata.

² The sentences used as examples are excerpted from the Bulgarian National Corpus (<http://search.dcl.bas.bg/>).

³ Studies dealing with verbal aspect have also shown that prefixes play a very important role in expressing Aktionsart. This side of the topic, however, remains outside the scope of this study.

- Quickly and silently pro-ran up to the foot of the mound.
'He ran quickly and silently to the foot of the mound.'
- (4) “Skăpa, roden sãm da *byagam*... ot telefonniya sekretar”.
honey born was to run... from the answering
machine
'Honey, I was born to run... from the answering machine.'

Comparing these two examples, we can conclude that, although prefixes cannot stand by themselves and should always be attached to a simplex verb, they have their own meaning. With most prefixes, their lexical content is analogous to that of a cognate spatial preposition. With *pro-* in Bulgarian, however, it is not the case because it is one of the so called *orphan prefixes*⁴. In Talmy's terminology (2000), Slavic verbal prefixes are *satellites*⁵ which are used to express the meaning of PATH in motion events. As both English and Bulgarian are satellite-framed languages, our primary goal in this paper is to determine the semantic contribution of the prefix *pro-* in English and Bulgarian verb databases collected for the purposes of the study.

The English corpus was developed in two stages. In the first one, pro-verbs were extracted from a number of dictionaries: Cambridge Dictionary (<https://dictionary.cambridge.org/>), Collins Dictionary (<https://www.collinsdictionary.com/>), Macmillan Dictionary (<https://www.macmillandictionary.com/>), Longman Dictionary of Contemporary English (<https://www.ldoceonline.com/>), Oxford English Dictionary (<https://www.oed.com/>), etc. The total number of verbs excerpted from the dictionaries was 58; then, in the second stage, we carried out an online search (both in the British National Corpus and on the Internet) of all the verbs in order to find those actually used by speakers. The verbs with less than ten hits were excluded from the corpus and, as a result, we are going to discuss only 35 verbs.

The Bulgarian corpus of verbs prefixed with *pro-* was constructed in three stages. Firstly, all prefixed pro-verbs were extracted from Rečnik na bălgarskija ezik (<https://rechnik.chitanka.info/>) and Eurodict⁶ (<https://eurodict.com/>). Secondly, the total of 170 verbs found in the two dictionaries was compared to the verb entries in Pashov's (1966) comprehensive study on Bulgarian verbs. As a result, 8 new pro-verbs were

⁴ The term *orphan prefix* is used for “(...) a Slavic prefix that no longer shares a dominant spatial meaning with its cognate preposition” (Dickey 2012: 67).

⁵ In *satellite-framed* languages the prefix/ postfix expresses the PATH as opposed to *verb-framed* languages which typically express PATH in the verb root (cf. Talmy 2000).

⁶ *Eurodict* is an online multi-lingual dictionary containing 60,000 words in Bulgarian.

added to the database. In the third stage, the verbs' frequencies were checked in the Bulgarian National Corpus (BulNC); 42 pro-verbs showed less than ten hits and were additionally checked on the internet. Nine of these verbs were attested online and the final number of pro-verbs in the Bulgarian database grew to 145.

2. The semantics of English *pro-*

The prefix *pro-* primarily means “forward, forth, toward the front” (see <https://www.etymonline.com/search?q=pro>), originating from Latin *pro* (adv., prep.) “on behalf of, in place of, before, for, in exchange for, just as”, which was also used as a first element in compounds and had a collateral form *por-*. Also, in some cases, the meaning of the cognate Greek preposition *pro* is applied “before, in front of, sooner”, which can also be a prefix in Greek. Both the Latin and Greek words are from PIE **pro-* (source also of Sanskrit *pra-* “before, forward, forth”; Gothic *faura* “before”, Old English *fore* “before, for, on account of”, *fram* “forward, from”), extended form of the root **per-* (1) “forward”, hence “in front of, before, toward, near”, etc.

According to Cambridge Dictionary, the common modern sense of *pro-* is “supporting or approving of something” and Longman Dictionary adds “in favour of or supporting something”. In both cases the derivatives are nouns, e.g., *pro-independence*, *pro-health*, *pro-choice lobby*, etc.). The latter meaning was not in classical Latin and is attested in English from early 19 c. In the phrase “pros and cons,” those people who are *pro* speak “for” something. There are two widely used Latin phrases that have come into English which use the word *pro*. A lawyer who works *pro bono* does free legal work “for” the common good as a volunteer. A *quid pro quo* situation means returning a favour, in other words, if you do something “for” me, and I’ll do something “for” you. However, these examples are not part of the corpus as we are going to analyse *pro-* only as a preverb.

The English prefix *pro-* primarily means “forward”. For instance, when you *proceed* with something, you go “forward” with it. When you *promote* something, you advance (someone) to a higher position. And when you tend to *procrastinate*, you keep on putting things “forward” to a future time, thereby they remain undone. The following Table 1 summarizes all the verbs prefixed with *pro-* from a diachronic perspective.

Table 1. Verbs prefixed with *pro-* in English

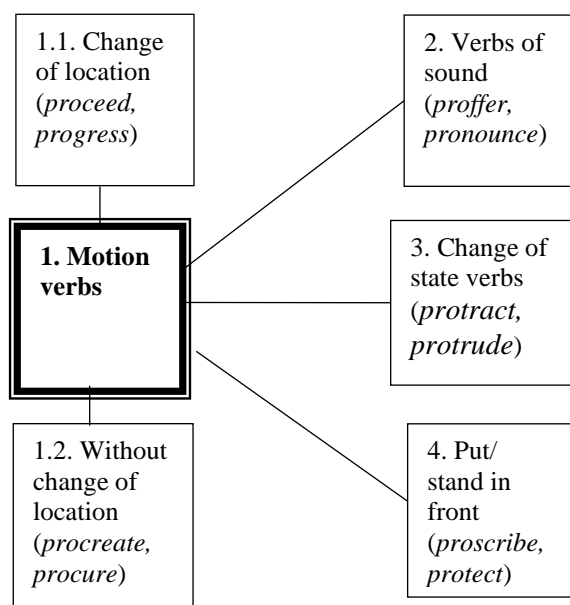
FORWARD
problematize - to put a problem forward; pro "forward" (from PIE root * <i>per-</i> (1) "forward") + <i>ballein</i> "to throw"
proceed - to go forward; pro "forward" (from PIE root * <i>per-</i> (1) "forward") + <i>cedere</i> "to go"
procrastinate - to put off till another day, forward to a future time; pro "forward" (see <i>pro-</i>)

+ crastinus "belonging to tomorrow,"
progress - step forward in space; pro "forward" (see pro-) + gradi "to step, walk,"
prolapse - glide forward, slide along; see pro- "forward" + lapse (n.) "a falling down"
promote - advance (someone) to a higher grade or office; pro "forward" (see pro-) + movere "to move"
prompt - to incite to action, urge; pro "forward" + emere "to take"
propel - push forward, drive forward, drive forth; pro "forward" (see pro-) + pellere "to push, drive"
propound - to put forward, assert; pro "before" (see pro-) + ponere "to put"
prosecute - to follow up, pro- "forward" (see pro-) + sequi "follow"
protrude - thrust forward or onward, to drive along; pro "forward" + trudere "to thrust, push"
prove - try by experience; *pro-, extended form of root *per- (1) "forward," hence "in front of," + root *bhu- "to be,"
provide - make provision for the future; arrange; pro "ahead" (from PIE root *per- (1) "forward") + videre "to see"
FORTH
proclaim - make known by public announcement; pro "forth" (from PIE root *per- (1) "forward") + clamare "to cry out"
procreate - generate, engender, grow forward; pro "forth" (see pro-) + creare "create" (from PIE root *ker- (2) "to grow")
produce - develop, proceed; pro "before, forth" + ducere "to bring, lead"
profess - take vow, confess; pro- "forth" (from PIE root *per- (1) "forward") + fateri (past participle fassus) "acknowledge, confess"
prohibit - forbid, pro "away, forth" (see pro-) + habere "to hold"
prolong - lengthen in time, extend the duration of; pro "forth" (see pro-) + longus "long"
promulgate - make publicly known, propose openly, publish
pronounce - pro "forth, out, in public" (see pro-) + nuntiare "announce,"
proffer - from por- "forth" (from Latin pro; see pro-) + offrir "to offer,"
propagate - set forward, extend, spread; pro "forth" (see pro-) + -pag "to fasten," source of pangere "to fasten"
propose - put forward or offer for consideration; pro "forth" + poser "put, place"
prorate - divide or distribute proportionally; derived from Latin pro rata
prorogue - prolong, extend; pro "before" + rogare "to ask, inquire, question; ask a favor,"
proscribe - write before or in front, prefix; pro "before" + scribere "to write"
protest - pro- "forth, before" (from PIE root *per- (1) "forward,") + testari "testify"
protract - draw forth, prolong; protrahere "to draw forth, prolong."
protuberate - bulge out, swell beyond; protuberare "to swell, bulge, grow forth"
provincialize - make something provincial; pro- "before" + vincere "to conquer"
provoke - induce, stimulate; pro "forth" + vocare "to call,"
FOR/ IN BEHALF OF
procure - care for, be occupied with; bring about, pro "in behalf of"
prognosticate - foretell by means of present signs; pro- "before" (see pro-) + gignōskein "come to know"
prosper - be successful, thrive; pro "for" (see pro-) + ablative of spes "hope"
prostitute - offer to sexual intercourse; pro "before" (see pro-) + statuere "cause to stand, establish"
protect - cover or shield from danger; pro "before" (from PIE root *per- (1) "forward,") +

tegere "to cover"

The data show that the prefix *pro-* is not easily distinguished as without it the root morpheme does not correspond to a base verb. The only approach for studying these verbs is the diachronic one because in other examples with an initial *pro-* morpheme it is not considered a prefix, e.g., *probe*, *probate*, *proliferate*, *promise*, *prowl*, etc.

Fig. 1. The semantic network for English *pro-*



Having defined the main meanings of the prefix *pro-*, we can use the collected data to organize the verbs it combines with in semantic classes. Four main semantic classes can be distinguished (see Fig. 1): verbs denoting motion (e.g., *progress*, *prosecute*, *propel*, etc.), verbs denoting the production of sound (e.g., *proclaim*, *proffer*, *pronounce*, etc.), verbs denoting a change of state (*protract*, *protrude*, *protuberate*, etc.) and verbs which denote ‘put/stand in front’ (*proscribe*, *protect*, *prohibit*, etc.).

2.1. English *pro-*verbs denoting motion

The use of motion should be further clarified here as it includes not only verbs denoting movement from one place to another but also verbs denoting an activity leading to a change of size, shape or posture.

2.1.1. English pro-verbs denoting change of location

This group contains only a couple of verbs (e.g., *proceed*, *progress*). The following examples show two different uses of *proceed*.

- (5) a. We *proceeded* to Houston and our hotel.
b. I *proceeded* to find a spot to devour this meal.

In (5a) *proceed* is an intransitive verb followed by an adverbial (*to Houston and our hotel*) marking the end of the destination. In (5b) modifying the temporal reference of the event, *proceed* is used as an aspectual verb, combined with the infinitive *to find*. This instance illustrates the conceptual metaphor TIME IS SPACE (Lakoff 1980), in particular the Ego Moving metaphor, in which the TR moves along the space-time continuum. Concrete motion verbs quite often develop metaphorical extensions, e.g., *progress* can refer to a movement not only in space but also in time (see 6):

- (6) As the year *progressed*, students flexibly used comprehension strategies...
(7) I think you've *procrastinated* long enough.

The Trajector⁷ (TR) in (6) is *the year* and represents the Time Moving metaphor. Traditionally, the observer stands still and time travels to the observer in the direction from the future to the past. There is back and front orientation around the observer along the movement line. In the above example (6), however, the time is moving to the future, while the observer is still comparatively static and the time travels past the observer in the direction from the past to the future. The verb *procrastinate* 'forward to the future' is related to the same conceptual metaphor TIME IS SPACE, emphasized by the adverbial *long enough*. More specifically we should define this situation with the Ego Moving metaphor, but the subject of the sentence is not moving to the future in this case, rather it puts off something that needs to be done till another day, i.e., an event is pushed to the future. This event is the actual TR, which is not mentioned explicitly, while the subject is the Instigator. Examples (6) and (7) show variations of the TIME IS SPACE metaphor; apart from the TR – LM dichotomy, a third participant is included, the Instigator.

⁷ The terms Trajector (TR) and Landmark (LM) originate from Langacker's Cognitive Grammar (1987). A TR is the located object, and the LM is the referent participant.

2.1.2. English pro-verbs denoting motion without change of location

This group comprises a variety of verbs which denote motion in a very broad sense, which involves an activity without an obligatory shift of location, e.g., *procreate, procure, produce, prosecute, provide*, etc. Most of the verbs in this group are of the self-motion type, associated with an animate TR who is also an Instigator of the activity. Additionally, in this group we find a few verbs of caused motion. They are characterized by a particular grammatical structure from the perspective of Construction grammar.

- (8) That *prompted* the judge to say how angry he was;
- (9) My family *propelled* me to get a college degree in Graphic Design...

Apart from the Trajector (TR) and Landmark (LM), there is an Instigator that could be either inanimate (see in 8 *that*) or animate (in 9 *my family*) which causes the Trajector (in 8 *the judge*; in 9 *me*) to do something (LM). All in all, the verbs in this section do not lead to a destination, which requires a shift of place. An abstract GOAL⁸ is achieved through the activity denoted by the verb.

2.2. English pro-verbs denoting the production of sound

Some of the verbs in the sound group prefixed with *pro-* derive from base verbs denoting the production of sound, e.g., *proclaim, proffer, promulgate, pronounce, propound*, etc. This, however, does not mean that the prefix *pro-* is empty of meaning. The additional meaning *forward/ forth* is present in each one of them, which proves the claim that prefixes add to the meaning of the base verb.

A subtype of this group not only denotes the production of sound but there is also an accompanying motion, e.g., *promote, propagate, propose, prove*, etc. The concept of PROGRESS is involved in the semantics of the prefix *pro-*.

- (10) Trump was universally ridiculed for what he *promoted* as “very big news”...
- (11) The errors *propagated* by Notre Shame are too numerous to list here.

⁸ The GOAL is the endpoint of a PATH and, in most of the cases, it is not equivalent to the other points of the path. It usually designates the motivation for the PATH.

- (12) While Wilczek mathematically *proved* that a time crystal can exist, how to physically realize such a time crystal...

In (10) the act of promotion can be realized by verbal support or actively encouraging a person, cause, venture, etc. The verb *propagate* in (11) is a synonym of *promote* used when an idea, theory, etc. is spread widely verbally or by actions. In (12) the TR (*Wilczek*) *proved* his claim in writing, which is an activity, but it is also possible to do it orally.

2.3. English pro-verbs denoting a change of state

Verbs of this group denote different changes in the dimensions of the LM, e.g., *prolong*, *prorate*, *prorogue*, *protract*, *protrude*, *protuberate*, etc.

- (13) I don't *prolong* text conversations and pay attention to cues.
(14) (...) Board in administering the provisions of this Amendment shall be *prorated* among the various counties...
(15) (...) March 1773 for a brief ten-day session, and then *prorogued* it again for another fourteen months.
(16) For patients with asthma who have *protracted* exacerbations requiring prolonged courses of anti-inflammatory therapy...

The data studied, of which the above examples are excerpted, show that mainly abstract LMs change their characteristics. In most cases, it is a period of time (15) or events associated with a period of time (13, 16) which are prolonged. In (14), the Trajector (*the provisions*) changes its integrity and is divided among the plural LM (*the various counties*). In all the examples the prefix *pro-* adds the meaning of PROGRESS. The object of the verb refers to a material entity which undergoes an internal modification.

2.4. English pro-verbs denoting putting/ standing in front

In this group we incorporate verbs with the common metaphorical meaning 'put something/ stand in front', e.g., *proscribe*, *prohibit*, *protect*, etc.

- (17) The trial court might well have *proscribed* extrajudicial statements by any lawyer, party, witness...
(18) (...) because of laws that *prohibited* them from owning land in certain parts...
(19) He *protected* the funding during the recent budget negotiations.

Although these verbs look quite different in their denotation, they share the same word-formative motivation of *pro-* 'before/ in front' + verb:

with *proscribe* (17) it is a text (*extrajudicial statements*) that is put in front; with *prohibit* in (18) the *laws* are in front of them and forbid them to take the land; with *protect* (19) there is a metaphorical barrier which does not allow anyone to reach the funding. In this group we can also put the verb *prostitute* with a similar motivation of the relation between the prefix *pro-* and the Latin root morpheme corresponding to ‘cause to stand’ and can be interpreted as ‘making s.o. stand in front so that the people passing by can see them’ or ‘expose publicly’. The contemporary meaning of the verb ‘hire for sex’ is not inherent in the etymology but originated from ‘offered or exposed to lust’ dated to 16 c.⁹

To sum up what have been said so far, the English prefix *pro-* is found in both stative and dynamic verbs with or without a change of location. In all cases, it adds the meaning ‘forward/ forth’ to the meaning of the root morpheme which associates the derived verbs with motion although they primarily refer to abstract phenomena.

3. The semantics of Bulgarian *pro-*

The meaning of the Bulgarian prefix *pro-* is polysemous and it is described differently by various dictionaries¹⁰ and grammar books (Andreychin et al. 1993). The number of different meanings pointed out ranges from six to eleven and the most detailed list is provided by Andreychin et al. (1993, p. 224): 1. Verbs denoting that the activity of the base verb comes to a result: *prokālna* ‘curse’, *prosledya* ‘trace’, *npochema* ‘read’. 2. Verbs denoting that the subject of the activity acquires a quality inherent to the base noun or adjective: *provinya se* ‘repent’, *prohladya se* ‘cool down’, *proysnya se* ‘clear up’. 3. Verbs denoting that the activity of the base verb divides space or time: *provra* ‘pass through’, *pronikna* ‘penetrate’, *protsedyaya* ‘seep’. 4. Verbs denoting that the activity of the base verb penetrates the affected object: *proboda* ‘stab’, *prostrelyam* ‘shoot’, *produpcha* ‘pierce’. 5. Verbs denoting that the activity of the base verb is performed only once: *probucha* ‘roar’, *prozvānya* ‘ring’, *promārmorya* ‘murmur’. 6. Verbs denoting that the activity of the base verb is performed for a short time and with interruptions: *progracha* ‘croak’, *proreva* ‘growl’, *prorāmzha* ‘growl’. 7. Verbs denoting the beginning of the activity of the base verb: *progledam* ‘begin to see’, *propeya* ‘begin to sing’, *prohodya* ‘begin to walk’. 8. Verbs denoting that the activity of the base verb is intensive: *proglusha* ‘deafen’, *propishitya* ‘shriek’, *protsāftyaya* ‘flourish’. 9. Verbs denoting that the activity of the base verb is performed weakly: *prokashlyam se* ‘cough’, *propera* ‘wash’, *prosāhna* ‘dry’.

⁹ See <https://www.etymonline.com>

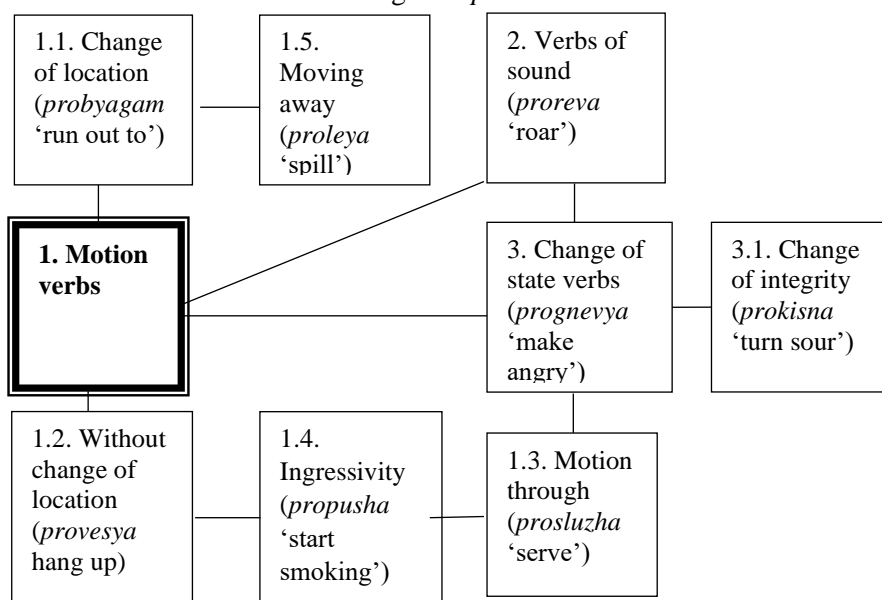
¹⁰ See <http://talkoven.onlinerechnik.com/duma/%D0%BF%D1%80%D0%BE->

10. Verbs denoting that the activity of the base verb comes to a result and is spread over the whole object: *progniya* ‘decay’, *promiya* ‘wash’, *prochistya* ‘purge’. 11. Verbs denoting that the activity of the base verb exhausts or depletes the object: *progulyaya* ‘feast’, *proigraya* ‘gamble away’, *propiya* ‘soak’.

An overview of the suggested groups of verbs reveals a partial overlap of semantic groups, e.g., 5 an activity performed once (e.g., *prozvānya* ‘ring’) and 6 an activity performed for a short time (e.g., *prorāmzha* ‘growl’); the suggested examples show that the verbs which are performed once also take short time and vice versa, those which are performed for a short time may happen either once or may be repeated several times. It is difficult to determine groups 8 and 9 as the characteristics “intensive” (e.g., *protsāftya* ‘flourish’) and “weak” (e.g., *prosāhna* ‘dry’) are relative. Groups 10 (e.g., *promiya* ‘wash’) and 11 (e.g., *propiya* ‘soak’) both refer to an object and how the activity affects it.

The analysis of the data (145 pro-verbs) collected for the purposes of this study shows that the prefix *pro-* combines with three semantic classes of base verbs (see Fig. 2): verbs denoting motion (e.g., *probyagam* ‘run out to’); verbs denoting the production of sound (e.g., *prokāntya* ‘ring out, resound’); verbs of change of state (e.g., *protocha* ‘prolong’). Some of the pro-verbs may be interpreted as belonging to more than one category, e.g., some ingressive motion verbs also denote the production of sound – *prohārkam* ‘start snoring’, *protsvilya* ‘start neighing’, etc., therefore the boundaries between the groups are fuzzy.

Fig. 2. The semantic network for Bulgarian *pro-*



3.1. Bulgarian pro-verbs denoting motion

Of all 145 pro-verbs in the corpus of our research 76 are motion verbs or dynamic verbs as they are traditionally called. However, having so many verbs in one group presupposes its diversified nature. Firstly, we focus on motion verbs which involve an actual movement of the TR with a change of location as with *profucha* ‘rush by’, *provodya* ‘send off’, *propǎrlzya* ‘crawl’, *prosledya* ‘trace out, follow’, etc. Secondly, we study motion verbs which do not require a shift of place, such as *provesya* ‘suspend, hang up, dangle’, *provǎrvya* ‘put on a thread’, *provǎrtya* ‘turn, revolve’. Thirdly, we discuss motion verbs which denote motion through a bounded LM, e.g., *proboda* ‘pierce, run through’, *produham* ‘blow through’, *propadam* ‘fall through, collapse’. Two other groups of verbs denote motion related to different parts of the PATH, the initial one (see 3.1.4.) or away from the LM (see 3.1.5.).

3.1.1. Bulgarian pro-verbs denoting change of location

Similarly to English, the prefix *pro-* in Bulgarian is often attached to base verbs of movement, e.g., *byagam* → *probyagam*, describing situations as exemplified in (20) and (21a, b):

- (20) Izpravi se i prodǎlzhi da *byaga* s leko nakutsvane.
‘He stood up and continued to run with a slight limp.’
- (21) a. V kraypǎtniya izkop na nyakolko krachki napred *probyaga* plǎh.
‘A rat ran into the roadside ditch a few steps ahead’.
b. Sluchaen begach, izlyazǎl da *probyaga* dnevninya si kros, go be nameril rano sutrinta(...)
‘A random runner, out for his daily run, had found him early in the morning(...)’

In this context, we should distinguish between *byagam* ‘run’ and *probyagam* ‘run out to’. We should define the base verb as atelic because it does not have a specific goal or endpoint; it shows the manner of motion in (20) ‘continued to run with a slight limp’. Adding the prefix *pro-* to the base verb results in a situation in which the subject has a particular Landmark in mind. All *pro-* prefixed verbs focus on this segment of motion where the TR is within the limits of the LM. This means that they should be described as telic ones because the TR shifts from one reference point to another during the motion.

We suggest that two concepts are associated with the spatial uses of the prefix *pro-*. First of all, *pro-* denotes PROGRESS, secondly, it limits the motion PATH within the boundaries of the LM. The focus is on the phase of the movement which is within the scope of the LM. In (21a), the PATH of the

TR (the *rat*) is bounded; the TR changes its location from one place to another in the roadside ditch (LM), but the activity has started before the moment of speaking and will go on after the moment of speaking. Therefore, in the sentence we express the segment of space and time limited by the LM. The PATH may not be explicitly marked as example (21b) shows; the noun *kros* ‘race, run’ is related to the activity of running and it could be interpreted as the distance covered daily by *the runner* (TR).

- (22) a. Po litseto mu *probyaga* syanka.
‘A shadow crossed his face’.
b. Shokăt *probyaga* prez krakata mi, zaklyuchvayki stavite mi.
‘Shock ran through my legs, locking my joints’.

In (22), the same Bulgarian verb is used but there is no shift of physical location, rather a metaphorical transfer of emotions is observed. Similarly to the English verb *run*, which is used in cases where there is no change of reference place, e.g., *His nose was running*, the Bulgarian verb *byagam* has a lot of figurative meanings. In (22a), the TR (the *shadow*), which stands for the emotion of the person, runs metaphorically through the LM (the *face*), which represents a bounded PATH. Likewise, the abstract TR in (22b) has a bounded PATH, which is limited by the LM (*my legs*).

3.1.2. Bulgarian pro-verbs denoting motion without change of location

We need to emphasize the fact that not all motion verbs involve an actual movement of the TR with a change of location, e.g., *provesya* ‘suspend, hang up, dangle’, *provărnya* ‘put on a thread’, *provărtya* ‘turn, revolve’.

- (23) Tya *provesi* kraka ot vanata i izskochi navăn.
‘She dangled her feet from the tub and jumped out.’

In this case (23), the addition of prefix *pro-* emphasizes that the motion takes place in respect to an LM (*the tub*). The verbs in this group do not intrinsically involve any shift in place. Once again, a dynamic interpretation of the action obviously comes from the addition of the prefix *pro-*.

3.1.3. Bulgarian pro-verbs denoting motion through

The prefixed verbs of this group (32 verbs) denote ‘motion through’, e.g., *prorezha* ‘cut through’, *pronizha* ‘pierce, run through’, *prostrelyam* ‘shoot dead’, etc. This kind of motion requires an LM which is a physical entity as

in (24) or an abstract phenomenon as TIME or process, respectively, in (25a) and (25b):

- (24) (...) i ostra bolka *proryaza* glezena mi.
'(...) and a sharp pain shot through my ankle.'
- (25) a. I tryabvashe da *prosluzhi* izvestno vreme kato komandir, za da poluchi tova povishenie.
'And he had to serve some time as a commander to get that promotion.'
- b. Mozheh da nakaram kompyutära da *proanalizira* tehnologicheskiya protses...
'I could have the computer analyze the process.'

In (24), the TR (*a sharp pain*) goes through the LM (*my ankle*), which is a bounded entity. In this case the prefixed verb is used metaphorically although the LM is part of the human body. In (25a), the verb *prosluzhi* 'serve' takes a temporal LM, therefore the conceptual metaphor TIME IS SPACE can be applied. The Moving Ego goes along a temporal PATH, bounded by the required period of his service. In (25b), the verb *proanalizira* 'analyze' is followed by an abstract LM, a process. The semantics of the base verb presupposes that the activity develops in time, adding *pro-*, however, suggests a nuance of meaning, which brings the idea of a thorough analysis.

On the whole, this kind of verbs generally expresses the movement through the LM. However, prefixed with *pro-*, all of these verbs denote dynamic spatial relationships.

3.1.4. Bulgarian pro-verbs denoting ingressivity

This group of 15 verbs, e.g., *propisha* 'begin to write', *propusha* 'start smoking', *prorabotya* 'start working', refers to a bounded LM, but the focus is on the initial stage of the activity (see 26).

- (26) A otkakto *prohodiha*, sa kato bratya, che i poveche... divi kato vācheta.
'And since they learned how to walk, they are like brothers, even more... wild as wolves.'

The perfective pro-verb *prohodya* 'start walking' derives from the imperfective *hodya* 'walk', and clearly reveals the ingressive/ starting meaning of the prefix *pro-*. Similarly to the Bulgarian prefix *za-*, which also expresses ingressivity (see Nedelcheva 2010, 2012), *pro-* denotes the beginning of a process as a point in time at which a change of state begins.

Unlike *za-*, *pro-* suggest nuances of meaning, namely acquiring an ability, e.g., *proyam* ‘begin to eat’, *prohārkam* ‘start snoring’, *protsvilya* ‘start neighing’, or overcoming a barrier, e.g., *proticham* ‘begin to flow/leak’, *prolicha* ‘appear, be visible’, *providya* ‘see the future’, etc.

3.1.5. Bulgarian pro-verbs denoting moving away

This is a small group of 6 verbs, *progonya* ‘chase/drive away’, *proleya* ‘shed, spill’, *promiya* ‘wash away, wash out’, *propileya* ‘dissipate, waste’, *proplakna* ‘rinse out’, *propādyā* ‘drive/chase away’, which can also be subsumed under 3.1.2. (Bulgarian pro-verbs denoting motion without change of location). The common meaning of all the verbs in this group is ‘moving away’, but it is also found in the meaning of their base verbs. The supplementary meaning added by the prefix *pro-* is expressed by the focus on the last segment of the activity, which marks its completion. One more verb can be included in this group with its metaphorical meaning: *proigraya* ‘gamble away, lose’:

- (27) No poradi vrozenata si glupost *proigra* i vtoriya si shans.
‘But because of his innate stupidity, he also lost his second chance.’

In (27) the LM (*his second chance*) moves away as a result of the activity. Concurrently, the concept of PROGRESS is preserved.

3.2. Verbs denoting the production of sound

This semantic class contains 40 verbs, which take the prefix *pro-* and refer to sound phenomena accompanying certain motions, e.g., *proslavya* ‘make famous, glorify’, *prostena* ‘groan/moan out’, *prosumtya* ‘give a grunt’. The following examples illustrate these sound phenomena in context:

- (28) Nyakoy *proskimtya*, drug izkreshtya da zatvori vratata s presipnal glas.
‘Someone whimpered, another shouted to close the door in a hoarse voice.’
- (29) Ne se oglezhday — *proshushna* drezgav glas, — samo slushay.
“Don't look around”, whispered a hoarse voice, “just listen.”

A comparison of the simplex verbs *skimtya* ‘whimper’ and *shushna* ‘whisper’ and the corresponding verbs derived with *pro-* show that the latter are capable of expressing dynamic production of sound because of the concept of PROGRESS involved in the semantics of the prefix *pro-*. What is more, *pro-* in Bulgarian, as well as *iz-*, when combined with verbs of sound

emphasize a single act, i.e. the sound is produced once, a sense which is absent with the imperfective base verbs (Nedelcheva, Šarić 2022). In Bulgarian, other prefixes are also combined with verbs denoting the emission of sound (*pri-*, *pre-*, *iz-...*) to express similar or slightly different meanings, e.g., *izskārtsam* ‘creak/ squeak once’, *dobrāmcha* ‘come buzzing’; *dobucha* ‘come rumbling’, *prigārmya* ‘start thundering’, *preshumolya* ‘rustle, ripple’, *predrāncha* ‘rattle, jangle’. *Pre-* adds the meaning of transfer, the focal point of *pri-* is a directed motion to a goal, *do-* suggests a contact with the goal. The choice of a particular prefix is motivated by the different conceptualization of the situation and the sense we would like to convey.

3.3. Verbs denoting a change of state

Some other verbs (29 in this class) designate change of state, e.g., *prognevya* ‘make angry’, *prorasta* ‘sprout, shoot’, *protocha* ‘prolong’, more specifically the prefix *pro-* brings the meaning ‘change of mood’ or ‘change of shape’ of the LM.

- (30) Ayde, rosata *prosāhna*, da pushtame stokata na pasha!
‘Come on, the dew has dried, let's let the cattle graze!’

In (30), the subject of the verb (*the dew*) is an entity which undergoes an internal modification. We know from our experience that dew is condensed water from the air usually at night, which appears in droplets on grass, trees, etc. The simplex verb denotes the process of drying and the prefix *pro-*, when attached to it, encodes a dynamic relationship between the initial state of the dew and the final one in which it is turned into vapour. In association with this kind of verb, *pro-* adds the meaning of entirety, the process of drying passes throughout the entity. Hence, these derivatives with *pro-* usually collocate with adverbials which suggest ‘entirely’. *Nadālgo i nashiroko* in (31) means ‘from one end to the other’.

- (31) *Proagitira* me nadālgo i nashiroko, che moga da si namalya zastrahovatelnata lihva.
‘He persuaded me at length that I could lower my insurance rate.’

The pro-verb in (31) denotes a process in which the TR, which is not mentioned in the sentence but we elicit from the context that it is a person, persuades the LM, also a person in this case, to pass from one state into another. At the end, the LM is entirely influenced by the persuasion of the TR and agrees to lower his/her insurance rate. Different types of LM undergo the effect of the verb, both material and abstract ones. In all cases, it is spread

over the whole object (LM). A subtype of 3.3. Verbs denoting a change of state is 3.3.1. Verbs denoting a change of integrity.

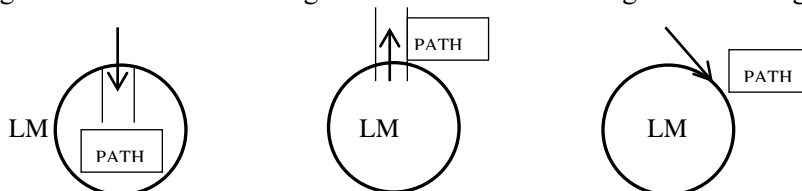
3.3.1. Verbs denoting a change of integrity

Part of the verbs which denote a change of state are more specific in their meaning and denote a change of LM's integrity, e.g., *progniya* 'rot through, decay', *progriza* 'gnaw through', *prodera* 'tear, pierce', *produpcha* 'perforate, punch', *prodānya* 'knock the bottom of', *prozhulya* 'scrub through', *prokopaya* 'dig, cut', *prokālnya* 'germinate', *prokāsam* 'wear out', *proskubya* 'pluck, weed out', *protriya* 'wear into holes', *protārkam* 'fray, wear through'. These 12 verbs, can also be interpreted as 'motion through' because they involve a kind of violation of LM's integrity.

- (32) Vecherta *prokopah* s rāka otvor v stenata, po mrāknało iznesoh tovara...
 'In the evening, I dug a hole in the wall with my hand, at night I took the load out...'

In (32) the LM's integrity is lost due to the activity expressed by the verb. The prefix *pro-* shows that the TR has created a PATH to the inside of the LM (see Fig. 3). This interpretation is relevant also for a number of other verbs from this class, e.g., *progniya* 'rot through, decay', *progriza* 'gnaw through', *prodera* 'tear, pierce', *produpcha* 'perforate, punch', *prodānya* 'knock the bottom of'. However, this is not the only option. The PATH made by the TR may lead to violation of the integrity of the LM from the inside to the outside (see Fig. 4), e.g., *prokālnya* 'germinate' or the surface of the LM is affected, which causes a change in its integrity (see Fig. 5), e.g., *prodera* 'tear, pierce', *prozhulya* 'scrub through', *prokāsam* 'wear out', *proskubya* 'pluck, weed out', *protriya* 'wear into holes', *protārkam* 'fray, wear through'.

Fig. 3. Path inside LM Fig. 4. Path outside LM Fig. 5. Path along LM's surface

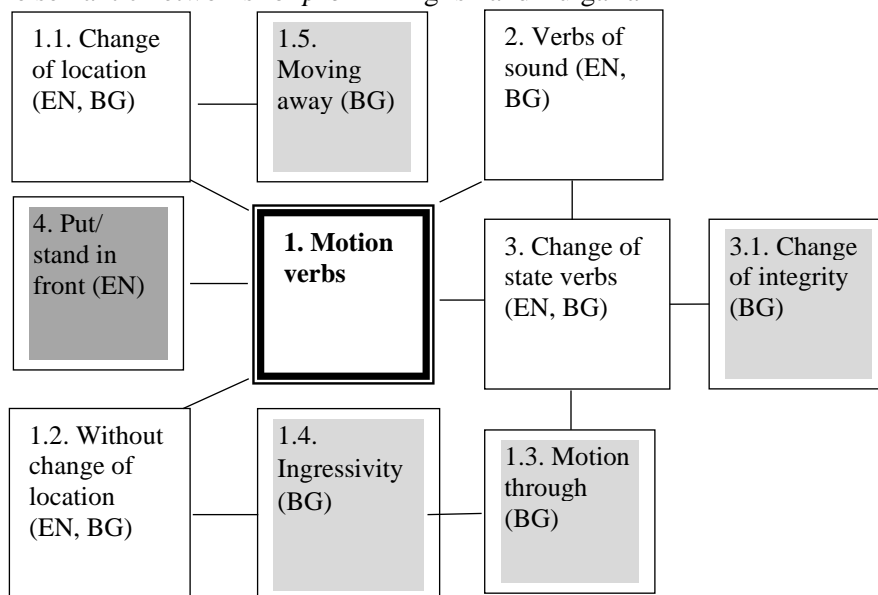


The concept of a PATH is framed by combining the semantic properties of simplex verbs with the idea of PROGRESS conveyed by the prefix *pro-*.

4. Conclusions

As the data reveal *pro-* is more productive in Bulgarian (145 verbs) than in English (35 verbs) and it has developed a more branched semantic network (see Fig. 6). Figure 6 is a combination of the semantic networks of *pro-* in English and Bulgarian. The joint network illustrates the common classes of verbs, represented in white boxes. The grey boxes reveal the differences in the types of verbs prefixed with *pro-* in both languages; the dark grey box belongs to the English (EN) network and the light grey ones refer to the Bulgarian network (BG).

Fig. 6. The semantic networks for *pro-* in English and Bulgarian



The analysis demonstrates more varied types of base verbs in the Bulgarian semantic network. The investigation of the spatial meaning of the prefix *pro-* first of all has to take into account the semantic properties of the base verbs with which this element is associated. In addition, the prefix can change the syntactic structure associated with the verb.

All the arguments provided above lead us to the conclusion that adding the prefix *pro-* to semantically different classes of verbs modifies their meaning, making the derived verbs highly dynamic, expressing a kind of progress. The reason to associate *pro-* with this kind of dynamic nature is its ability to turn even base verbs which inherently cannot refer to spatial phenomena into verbs of motion.

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