

A Scalar Approach to Slavic Verbal Prefixes

1. Introduction. It is well-known that Slavic verbal prefixes form a highly heterogeneous class. They fulfill a wide range of functions; to list just a few possibilities, they can contribute a spatial, cumulative, diminutive, inchoative, completive or distributive interpretation. Some of them affect the lexical meaning of the verb and can make idiosyncratic contribution (*lexical prefixes*); the contribution of others is always transparent and has a purely aspectual/quantificational nature (*superlexical prefixes*). Given the heterogeneous nature of verbal prefixes, a natural question to ask is whether it is possible to make any generalizations regarding their semantics. The situation is further complicated by the fact that a prefix with a given phonological realization may be associated with multiple meanings. A question is raised whether such items should be treated as a single prefix with a uniform but indeterminate meaning, or rather as instances of homonymy.

The purpose of this paper is to contribute to the study of Slavic prefixation and to the investigation of the issues raised above. I put forward the working hypothesis (*The Scalar Hypothesis*) that a verbal prefix imposes a relation between two degrees on a scale (e.g. a path scale, a property scale, a time scale, etc.). One is a degree associated with the event denoted by the verbal predicate. (Depending on the prefix and on the stem, this may be the degree of change argument (in the sense of Kennedy and Levin 2002), or a degree to which a gradable property holds of an event participant at a certain stage of the event.) The other degree is the standard of comparison, contributed by a linguistic expression that appears in the sentence, or by the context. This core meaning is represented in (1) (where R stands for a relation between degrees):

$$(1) \quad \lambda P \lambda d \lambda x \lambda e \lambda d_s. [P(d)(x)(e) \wedge d R d_s]$$

If a prefix has multiple uses, all of them will involve the same relation between the two degrees. They will differ primarily in terms of the scale on which the two degrees are compared. The intuitive contrast between the uses is to a large degree reducible to this basic distinction. In addition, the uses may differ in the source of the standard of comparison.

This analysis is in the spirit of some recent work on Slavic aspect which has related perfectivity and prefixation to the notions of scales and degrees. For instance, Filip and Rothstein (2006) analyze perfectivity as maximalization on events, where events can be maximal *relative to a scale*. Braginsky (2008) relates the semantics of the prefix *za-* in Russian to the notion of a scale. An analysis along the line of (1) has been provided by Součková (2004) for the prefixes *po-* and *na-* in Czech (the analysis is largely based on Filip's (2000) account of the prefixes *po-* and *na-* in Russian). Under her approach, the prefixes impose a relation between the degree of change, which can be viewed as an interval on a scale, and a contextually provided expectation value.

The goal of the present project is to put forward the more general analysis represented in (1) and argue that it applies to prefixes of different types, and is not limited to superlexical prefixes or to prefixes that function as measure functions or event delimiters. Further, the goal is to formalize those properties that unify different prefixes and different uses of a given prefix, and to determine the range of parameters in which prefixes and their uses may *differ* from one another. In this paper, which constitutes one step in this direction, I demonstrate how the approach applies to the prefixes *pod-* and *do-* in Russian. Importantly, the former prefix is associated with multiple uses most of which should be classified as lexical, whereas the latter has been argued by Tatevosov (2008) to belong to a third type, *an intermediate prefix*. Given that *po-* and *na-* are both superlexical prefixes, the present paper allows us to conclude that the Scalar Hypothesis successfully applies to prefixes belonging to all the three types.

2. The prefix *pod-*. The prefix *pod-* is associated with a wide range of meanings, quite different from one another on the intuitive level. Some of them are listed below (additional uses will be discussed in the paper). **(i) *pod-* of approaching.** This use is found primarily with determinate verbs of manner of motion, and the semantic contribution of the prefix can be intuitively described as *to approach* (in the manner of motion specified by the verb). This use is often accompanied by a direction phrase (e.g. the *k*-phrase in (2)).

(2) Maša podošla k magazinu.
 Masha *pod*-walked to store ‘Masha approached the store (by walking).’

(ii) ***pod-* of limited contribution.** When attached to degree achievements, *pod-* specifies that an event participant undergoes a change of state to a relatively low degree. Examples: *podtajat*’ (*pod-* + *melt*) - melt incompletely, *podrasti* (*pod-* + *grow (up)*) - grow (up) a little bit.

(iii) **vertical *pod-*.** This type of *pod-* is especially strongly related to the original meaning of the preposition *pod* (under). The precise effect of the attachment of the prefix is in part idiosyncratic, and its attachment is far from fully productive. Examples: *podložiti*’ (*pod-* + *lay/put down*, ‘to lay x under y’); *podbrošiti*’ (*pod-* + *throw*, ‘throw up’, i.e. the source is located **under** the goal).

I propose that under all these uses (and additional uses to be discussed in the paper), *pod-* specifies that the reported event (or some aspect of this event) reaches a relatively low degree *d* on a certain scale. The degree is lower than the standard of comparison d_s , which is either contextually or linguistically supplied. The uses of *pod-* differ in terms of the scale to which they apply, which is largely determined by the environment in which the prefix appears.

(3) $\lambda P \lambda d \lambda x \lambda e \lambda d_s [P(d)(x)(e) \wedge d < d_s]$

pod- of limited contribution applies to a property scale lexicalized by the verb. It specifies that the degree to which the property (*Q* below) holds of an argument at the end of the event is lower than the standard of comparison. The latter, in turn, depends on the type of scale lexicalized by the verb, namely, whether this is a closed scale (a scale with a maximal point). If the scale is closed, then the standard of comparison is the maximal point on the scale. If the scale is open, then the standard of comparison is a contextually provided standard.

(4) $[[\text{pod-V}]] = \lambda d \lambda x \lambda e \lambda d_s \lambda d'. [Q(d)(x)(M\text{-FIN}(e)) \wedge Q(d')(x)(M\text{-IN}(e)) \wedge d > d' \wedge d < d_s]$
 M-FIN(*e*) = the minimal final interval of *e*; M-IN(*e*) = the minimal initial interval of *e*
 (Rothstein 2008)

pod- of approaching applies to a path scale lexicalized by the verb and specifies that the point reached by the moving object at the end of the event is slightly lower on this scale than the point specified by the direction phrase.

Vertical *pod-* introduces its own scale, the same one that is introduced by the homonymous preposition (which encodes a spatial relation between two objects). The scale can be conceptualized as a path scale. It orders points that are spatially located under one another, with a lower position corresponding (iconically) to a lower degree on the scale. *Pod-* specifies that an argument of the *V* receives a lower value on this scale than the standard of comparison.

3. The prefix *do-*. The prefix *do-*, which is often translated as *to finish*, is illustrated in (5):

(5) On dočital knigu (do serediny)
 he *do*-read book till middle ‘He finished reading the book / half of the book.’

I propose that this prefix imposes a relation of identity between two degrees: it makes sure that the degree to which a gradable property characterizes an argument at the endpoint of the event is identical to the standard of comparison. The standard of comparison is often specified by a linguistic expression (e.g. *do serediny* in (5)). Such an expression is not required if the predicate lexicalizes a closed scale. In this case, in the absence of a *do*-PP, the standard of comparison will correspond to the maximal point on the scale. Depending on the semantics of the VP, the prefix may apply to a scale of volume/extent contributed by the object (as in (5)), a path scale, a property scale, or a time scale.

4. Parameters of variation. The Scalar Hypothesis predicts variation across prefixes in a range of parameters, which include: the relation imposed by the prefix between two degrees; the range of scales to which the prefix applies; the nature of the compared degrees (e.g. points vs. intervals); the source of the standard of comparison (e.g. a linguistic expression as opposed to a contextually supplied expectation value.)

5. Conclusion. The Scalar Hypothesis allows us to provide unified accounts of the prefixes *pod-* and *do-*. This shows that this approach applies successfully to different classes of prefixes and presents a promising direction for further investigation of Slavic verbal prefixation.