

TIME and SPEED: Where do speed adjectives come from?

ВРЕМЯ И СКОРОСТЬ: Как возникают прилагательные, обозначающие скорость?

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Abstract The article examines the relationship between time and space in language on the basis of adjectives denoting high or low SPEED in Russian and other (mostly Slavic) languages. In physics the notion of speed is defined in terms of time and space (distance per time unit). It is argued, however, that SPEED in natural language is a primarily temporal concept involving the comparison of the temporal properties of a ‘target situation’ with those of a ‘norm’. Speed terms are shown to develop their own metaphors and metonymies, subsequently becoming connectors and intensifying markers. This argument has important theoretical implications insofar as it demonstrates that the domain of time is less dependent on space than the traditional view might indicate.

Аннотация В статье анализируется связь пространственной и временной семантики на материале прилагательных, обозначающих высокую или низкую скорость в русском и некоторых других языках (в основном, славянских). В отличие от принятого в физике подхода, согласно которому понятие скорости определяется в терминах пространства и времени (как расстояние, пройденное в единицу времени), в естественных языках, как мы пытаемся показать, используется другая модель, трактующая скорость как главным образом темпоральное понятие: языковая оценка скорости ситуации обычно строится на сравнении темпоральных характеристик этой ситуации с темпоральными характеристиками некоторой «эталонной» ситуации. В статье прослеживаются пути возникновения прилагательных скорости (использующие особые типы метафорических и метонимических сдвигов) и их дальнейшая семантическая

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эволюция, часто приводящая к образованию интенсификаторов и дискурсивных коннекторов.

1 Introduction

This article focuses on the relationship between time and space in language, drawing on data representing adjectives denoting high or low *SPEED* in Russian and other languages. As is well known, in physics the notion of speed is defined in terms of both time and space (distance per time unit). We argue that *SPEED* in natural language is however primarily a temporal concept involving the comparison of the temporal properties of a ‘target situation’ with those of a ‘norm’.

Because it is a temporal concept, *SPEED* is expected to follow patterns of semantic shifts displayed by the other members of this category, including those motivated by the *TIME IS SPACE* metaphor. However, we show that speed terms develop their own metaphors and metonymies, becoming connectors and intensifying markers. This argument has important theoretical implications insofar as it shows that the domain of time is less dependent on space than the traditional view might indicate.

This article contains the following sections: Section 2 discusses standard and non-standard examples of the *TIME-SPACE* relation. Section 3 presents arguments for *SPEED AS DURATION*. Section 4 introduces the so-called ‘immediate’ reading of *SPEED* adjectives and adverbs. Sections 5 and 6 present the description of semantic sources of high and low speed for Slavic and some other European languages and in Sect. 7 *SPEED* terms are looked at as sources for further semantic development. Section 7 discusses *SPEED* and actionality, and a brief summary of the article is offered in Sect. 9.

2 The domain of *TIME: TIME IS SPACE?*

In the standard theory of spatial metaphors (both lexical and grammatical), it is customary to assume that time does not have a separate place in cognition. Instead time is understood in terms of the *TIME IS SPACE* metaphor. Abstract temporal meanings are usually expressed metaphorically, with spatial concepts serving as the source domain (Traugott 1978; Lakoff and Johnson 2003[1980]; Haspelmath 1997). This is the motive for the widely cited metaphor *A TIME PERIOD IS A CONTAINER*, as in the English *in the morning* or the Russian *v čas razluki* ‘at the time of parting’ (concerning various non-trivial properties of such expressions, see Nessel 2004, 2011; Makarova and Nessel [this volume](#)). The interpretation is that this metaphor models the ‘localizing’ function of temporal circumstances. A container is a quintessential static, immobile space, and it is natural to expect that language should use precisely this image in order to create an expression representing a static temporal characteristic that can ‘make room’ for an event within the boundaries of an interval of time.

Other examples of scholarly work on the *TIME IS SPACE* metaphor involve the analysis of situations that either implicitly or explicitly assume motion, in particular transportation across extended spaces. Transportation across spaces also takes time and thus *SPACE* and *TIME* are intimately connected from the start. Note that the same words are frequently compatible with expressions of distance and duration, as in *long street ~ long day*. One can say that these are examples of a (*TEMPORAL*) *DURATION IS (SPATIAL) LENGTH* metaphor, or that metonymy is at work here (due to the contiguity of spatial and temporal features in such situations). At any rate, there is no doubt that these concepts are motivated by *SPACE* instead of *TIME*.

It appears that this type of argument—treating the SPACE-TIME relationship as both metaphor and metonymy—can also be applied to most examples that express the spatial and temporal frequency of objects. Objects that are far apart (or close together) will be encountered by the observer rarely (or often) while moving across the place where the objects are found, witness Russian *redkij* combining the meaning ‘distant / widely spaced’ [stations, houses] and ‘rare’ [occurrence]. The spatial metaphor (TEMPORAL) FREQUENCY IS (SPATIAL) DENSITY is at work here: the relative distance between identical objects is connected to the temporal frequency of their appearance over TIME via metonymy.

TIME can be construed as a location, as a spatial length (duration, cf. also Fauconnier and Turner 2008), and as a spatial density (frequency) for events, and all three types of expression are clear classical examples of the relationship between SPACE and TIME. But there are also other, less standard facets of TIME.

One of these less standard facets is, for example, AGE, which also represents a bounded interval of time, but is highly specified: it is the period of time that a given individual has lived up to the moment of observation. There is no situation that links AGE to any space, and preliminary research on this concept shows that linguistically AGE is a duration with no or little connection to space (Taylor 1992), and furthermore that the concept of AGE is closer to aspect than to tense (Raxilina 2010[2000]).

Like all of the temporal concepts cited above, AGE seems to have a lexical expression in most languages. Some of the terms ultimately related to AGE even approach the domain of grammatical markers (primarily, in specifying nominal tense, cf. Nordlinger and Sadler 2004), which is of course evidence that in natural language AGE is cognitively important. In some ways the concept of SPEED is similar to that of AGE: they are both highly specific and they constitute two of the most complex TIME-based concepts, and despite of this fact (or perhaps exactly for this reason) the semantics of SPEED has received little scholarly attention. Our aim is to define the sources of our linguistic construal of SPEED and to consider these patterns against the classical background of spatio-temporal relationships. We will focus primarily on Russian adjectives that express high and low speed such as *bystryj* ‘quick’, *skoryj* ‘fast, rapid’, *medlennyj* ‘slow’, but will examine their linguistic behavior in the context of broader cross-linguistic as well as historical comparisons (mostly in the domain of Slavic languages).

3 SPEED and TIME

One might expect spatio-temporal relationships to figure prominently in research on concepts of SPEED since, unlike AGE, SPEED is very closely related to SPACE. According to physicists, SPEED, when describing the situation of motion, is defined in terms of SPACE, as we can see in this formula taken from the field of elementary physics: $Velocity = Space / Time$

This formula asserts that SPEED is a kind of SPACE, namely the distance traveled by an object divided by the duration of the interval. Physicists, speaking about speed of motion, thus intend to express it in maximally universal terms; for this purpose, they divide motion into equal parts according to temporal units available and then compare these parts to some standard measure. Of course, this division takes place only in their imagination—in the real world (as well as in natural language) the situation of motion, as any other situation, cannot be dismembered in such a way. A fragmentation of situations which would make linguistic sense, does exist as well, but it is rather a more complex segmentation into natural subevents, much in the spirit of what has been labeled ‘event structure’ (for a recent overview cf., for example, Dölling, Heyde-Zybatow and Schäfer 2008). This is why the linguistic construal of

SPEED differs from a physicist's understanding of it. Speaking about SPEED linguists do not rely on distance: what they are primarily concerned with is rather the relative duration of an event as compared to an average norm, cf., e.g., *it was a glorious sail, and we quickly covered the distance south along the island*¹ \approx 'the time span including the whole event of sailing was less than expected'.

From a mathematical point of view, the result arrived at is the same: the less time spent in motion, the greater the speed of the motion.

This line of reasoning can be easily transferred from the domain of motion to other common situations in everyday life that are relevant for speed as well, and this will make the main point even more accessible. For example, let us consider pumping water out of a hole: physicists would measure the average amount of water pumped out during a single time unit, while linguists (relying on the language speakers' common attitude) would rather assess the whole time span taken to empty the hole. The result will be the same in the sense that in both cases the right distinction between a quick and a slow pump can be easily obtained. However, the way of obtaining this distinction is obviously different.

Analogously, a collocation like *ate quickly* does not necessarily mean that someone ate a lot in a short time, although that is what it would have to mean if speed here referred to the amount of eating divided by the duration of the eating process. The emphasis is instead on a relatively short time span of eating, rather than on the quantity of food. Cf. also nearly synonymous *korotkij razgovor* 'short conversation' and *bystryj razgovor* 'quick conversation',² as well as *bystrye / kratkie sbory* 'quick / short travel arrangements', *bystryj / korotkij obed, udar, kivok, vzgljad*, etc. 'quick / short lunch, blow, nod, glance, etc.'; in these contexts, tiny semantic differences between *bystryj* and *korotkij / kratkij* 'short' are almost neutralized.

From a linguistic point of view, a situation cannot be presented as broken up into standard temporal units like minutes or seconds, it can only be shortened or lengthened as a whole. Alternatively, if it has some natural subevents, the intervals between these subevents can either be shortened or lengthened.

Simplifying somewhat, we can say that the linguistic idea of 'quick' / 'slow' amounts to the relative compression or expansion of a whole situation and / or of the intervals between its subevents.

Hence, SPEED is a kind of duration—and, consequently, a TIME-based notion, but it is rather special. In what follows we shall discuss its properties in more detail. Because these properties are at best only distantly related to the spatial domain, they are not motivated by SOURCE or GOAL metaphors and display unique patterns of conceptualization. The patterns under discussion, as we intend to show in what follows:

- are closely related to the actional type of the situation;
- are always related to other non-temporal properties of the situation.

¹<http://www.sailmagazine.com/paddle-sailing-lake-champlain> (17 June 2013).

²The latter combination is exemplified by contexts such as in the following example:

- (i) Posledoval *bystryj razgovor* po-ispanski među Èvelinoj i uborščicej, i potom Èvelina skazala: [...].
'There followed a *quick conversation* in Spanish between Evelina and the housemaid, and then Evelina said: [...].'
(G. A. Gazdanov. *Èvelina i ee druz'ja*. 1968)

The sentence in (i) emphasizes that both women spoke at a quick pace (the impression Spanish often makes on a foreigner), but does not explicitly assert that the conversation occupied a short time span.

4 SPEED and the structure of the situation

An important characteristic of the parameter of SPEED (one that it shares with AGE) is the fact that it does not apply to all kinds of situations. SPEED is relevant to heterogeneous dynamic processes, such as the types of situations that can be clearly articulated into qualitatively different phases that follow one after the other. Thus the parameter of SPEED can be applied to duration when the continuation of an event is either reduced or extended in time (as in *bystro el* ‘ate quickly’, *bystro razgoralsja* ‘quickly burst into flames’, etc.; obviously, all types of motion involving change of location are included here, cf. *medlenno šel* ‘walked slowly’ or *bystro skol’zil* ‘slipped quickly’). Alternatively, this parameter can be applied to a situation with multiple subevents, in which case it is either the subevents that are reduced or extended in duration, as in *medlenno raskačivalsja* ‘swung slowly’, or the intervals between the subevents, as in *bystro streljal* ‘fired shots rapidly’. Accordingly, homogeneous situations, in particular states and punctual events, are not categorized for SPEED, so one cannot say: **bystro videl* ‘quickly saw’, **medlenno našel očki* ‘slowly found his glasses’. The behavior of homogeneous processes that are qualitatively continuous is analogous, as we see for example with many verbs that describe sound and light, so one cannot say: **bystro gudel* ‘quickly buzzed’, **bystro svetilsja* ‘quickly shone’.

By contrast, in some cases punctual events can be collocated with adverbs describing SPEED, but in these contexts another meaning is expressed, and thus the interpretation of the adverb is modified. In such cases SPEED is understood as accessing the distance between reference time and event time, yielding a so-called ‘immediate (IMM)’ reading. Cf. Lat. *bis dat qui cito dat* ‘he gives twice who gives quickly’, where ‘gives quickly’ means ‘immediately after being asked to’. This interpretation is frequent for *bystro* ‘quickly’ in the context of many ‘reaction predicates’, as in *bystro otvetil / pomog* ‘answered / helped quickly’.³

However, even those situations which can be categorized for SPEED can be expressed by the use of different lexical markers. Studying these lexical differences (as well as the synchronic and diachronic polysemy and semantics of close cognates) allows us to elaborate on the linguistic conceptualization of SPEED and its satellite meanings expressed along with the main concept of duration.

Returning to the Russian *bystro* ‘quickly’, it is important to note that in many cases its use is open to two interpretations. For example, in contexts such as *bystro uznal / ponjal* ‘quickly recognized / understood’, the adverb refers either to the moment immediately after the information appeared, or to a foreshortened time span after the initiation of the cognitive process. However, in Russian there are additionally special lexical means that can be used to clarify the distinction between these two interpretations.

³This semantic shift exemplifies the so-called endpoint metonymy, usually represented by stock examples like *fly over the hill – live over the hill* (Brugman and Lakoff 1988), or, in terms of Padučeva (2004) and Kustova (2004), process-result metonymy, cf. examples like:

(i) *PROCESS*:

On rešitel’no zagoraživaet mne dorogu, snimaet kepku i snova ceremonno celuet ruku.
‘He firmly *blocks* my path, removes his cap and then ceremoniously kisses my hand.’

(RNC: Z. Maslennikova. *Razgovory s Pasternakom*. 2001)

(ii) *RESULT*:

Kirpičnaja stena počti celikom zagoraživala okno [...].
‘The brick wall *hides* almost the whole window.’

(RNC: B. Minaev. *Detstvo Levj*. 2001)

This kind of shift is typologically quite frequent and is not restricted to European languages. The same polysemy is also attested in Chinese 快 *kuài* for example, which means both ‘fast’ and ‘soon’.

To some extent, in modern Russian, *skoro* ‘soon’ has been specialized for the IMM-reading (*skoro vernus* ‘I’ll be back soon’), with some exceptions reflecting more conservative uses, such as *skoryj poezd* ‘high-speed train’, *skoryj sud* ‘quick trial’, or *skoropis* ‘shorthand writing’. Historically the adjective *skoryj* ‘rapid’ functioned as a synonym for *bystryj* ‘quick’ (cf. the Russian word for the parameter *skorost* ‘speed’, which is formed from the same root), but today it is primarily the adverb *skoro* ‘soon’ that is used, and in most contexts in the modern language it refers only to the rapid succession of events.

Furthermore, the semantic opposition of the two meanings referring either to HIGH SPEED in the unfolding of an event or to a small interval between events, is revealed in the use of antonyms. In modern Russian, the standard antonym for *bystro* ‘quickly’ is *medlenno* ‘slowly’, but when the IMM-reading is present, the antonym is *dolgo ne* (+ imperfective) ‘took a long time to’ instead. Thus *bystro otvetil* ‘answered promptly’ is opposed to *dolgo ne otvečal* ‘took a long time to answer’, whereas *medlenno otvetil* means ‘answered (speaking) slowly’, cf. these translation equivalents taken from the parallel corpus of the Russian National Corpus:

- (1) Irene’s lips quivered; then she *answered slowly*: “Do you ever think that I found out my mistake [...] the very first week of our marriage [...]?”
(J. Galsworthy. *In Chancery*. 1920)
U Irèn zadržali guby; ona *medlenno otvetila*: —“Dumali li vy kogda-nibud’, što ja ponjala svoju ošibku [...] v pervuju že nedelju posle svad’by [...]?”
(Translation by M. Bogoslovskaja)

5 Conceptualization of HIGH SPEED

The domain of HIGH SPEED is rich and well elaborated. This fragment of the Russian lexicon contains more than fifteen lexical units associated with the expression of the property of HIGH SPEED, among them: *bystryj*, *skoryj*, *šustryj*, *sporyj*, *bodryj*, *šibkij*, *prytkij*, *provornyj*, *rezvyj*, *retivyj*, *borzjy*, *letučij*, *stremitel’nyj*, *bojkij*, *beglyj*. *Bystryj* serves as an umbrella term for this group of words, covering the range of semantic variety, while the other lexemes are either more specialized or on their way to becoming obsolete.⁴

Of course, despite the abundance of lexemes with a similar shared meaning, no two of them are entirely synonymous. Note, for example, these differences in meaning: *beglo čitat* ‘read fluently’ vs. *bystro čitat* ‘read quickly’; *bojko govorit’ po-francuzski* ‘speak French fluently / glibly’ vs. *bystro govorit’ po-francuzski* ‘speak French quickly’. These differences give evidence of a large number of specific complementary parameters that motivate meaning distinctions in this semantic field. What is needed is an inventory of these differences and an investigation of their typological implications. Furthermore, from a historical point of view, adjectives that express HIGH SPEED represent a rather homogeneous class which appears to have two main sources:⁵ (A) Prototypically HIGH-SPEED situations of rapid physical motion, and, by metonymy, (B) prototypically ‘quick’ agents in habitual situations. A third type of

⁴When a semantic field is organized in this way with one lexeme that covers the entire range of parameters that a given language has at its disposal for making finer distinctions among them, thus dominating the field, and the remaining lexemes express more peripheral or recessive meanings, we refer to the former as the ‘dominant’ vantage, in keeping with MacLaury’s (2011[1997], 2000) use of this term in ‘vantage theory’.

⁵A highly detailed etymological analysis of various adjectives meaning ‘quick’ in the Slavic languages is available in a series of squibs published by Žanna Varbot (see Varbot 1992, 1994, and especially 1997). Many of the facts cited in this article come from this source.

source (which is closely connected to both the first and second types) is terms for perceptually salient physical properties, such as ‘light, flying’ (cf. ‘fly’), ‘sharp’ (cf. ‘cut’) etc. We will take up each source in turn.

- (A) HIGH-SPEED situations involving rapid physical motion include falling, running, flushing, hitting, throwing etc. This relationship is well documented in the etymologies of European languages in examples such as the Latin (and Romance) *rapidus* (from *rapere* ‘grasp, grab’), Lith. *ristas* (etymologically related to ‘run’, cf. OCS *ristati* ‘run, leap, ride’), Rus. *šibkij* and Pol. *szybki* (etymologically related to verbal root *šib-* ‘throw; hit’), Rus. *rezvyj* ‘nimble’ (etymologically related to verbal root *rež-* ‘cut’), Pol. *prędko* (etymologically related to ‘flush, flow’), Czech *rychlý* (attested in all West Slavic, etymologically related to ‘move’ and ‘break down’; its Russian cognate *ryxlyj* means ‘crumbly, loose’), etc. Here we primarily see rapid motion, falling (which is prototypically rapid), and prototypically rapid movements of the hands (grabbing, hitting, and the like).
- (B) The class of prototypically ‘quick’ agents can in part be illustrated by examples of the commonly used Modern Russian adjectives *živoj* ‘alive’ and *veselyj* ‘merry, cheerful’, which in their original meanings refer to human characteristics, but are used metaphorically to express ‘quick’. This metaphorical shift is particularly evident in Russian quasi-imperatives that use the comparative forms such as *živee!*, *veselee!* ‘[be] quick!’. Note that this is the only possible interpretation of the form *živee*, because the more standard interpretation for a comparative adjective (‘be more alive!’) is pragmatically unacceptable. The English adverb *lively* can sometimes fill a parallel function, as in the following translation equivalents from the parallel corpus of the Russian National Corpus:

- (2) The watch below, all hands to load muskets. *Lively*, men, and careful.
(R. L. Stevenson. *Treasure Island*. 1883)
Drugoj vaxte—zarjažat’ muškety. *Živee*, i bud’te vnimatel’ny!
(Translation by N. Čukovskij)
- (3) *Živee*, stara, gotov’ nam est’: put’ ležit velikij.
(N. V. Gogol’. *Taras Bul’ba*. 1842)
Be quick, old woman, get us something to eat; the way is long.
(Translation by I. F. Hapgood)

It is clear that from the cognitive point of view we can expect there to be a connection between (a) a meaning expressing the level of activity or energy of an object and (b) a meaning expressing the SPEED with which a whole event takes place. For this reason it is no surprise that Russian has a whole series of lexemes that refer to HIGH SPEED and exhibit this type of polysemy. In cases where this feature is expressed by an adjective that characterizes a subject, it involves activity, but in cases where the same feature appears as an adverb modifying a verb or an action, it relates to SPEED. Cf. for example *bojkij parenek* ‘quick [lit.] fellow’ meaning an ‘active fellow’ vs. *bojkaja trgovlja* ‘quick trade’ meaning that sales are ‘brisk’; *bodryj starik* ‘vigorous old man’ emphasizing that he is ‘energetic’ vs. *bodro zašagal k domu* ‘he vigorously stepped up to the house’, where the adverb describes SPEED. The same relationship is characteristic for various near-synonyms of the Russian *bystryj* ‘quick’: *prytikij* ‘quick, sharp’, *provornyj* ‘swift, agile’, *retivij* ‘zealous’, *šustrij* ‘bright’ and many others. Adverbs formed from these adjectives, such as *prytiko* ‘quickly’, *provorno* ‘swiftly’ etc., specify that an action takes place at HIGH SPEED.

Some lexical sources for the expression of HIGH SPEED are derived from roots referring to perceptually salient physical properties, such as ‘sharp’ or ‘light’ (Varbot 1997 gives examples of the Slavic lexemes in this group). Apparently these properties are metonymically

related to the expression of ‘prototypically rapid’ situations of the type described above: thus ‘cut’ motivates ‘sharp’, ‘fly’ motivates ‘light’, etc.

It is remarkable that the relevant situations are motivated by a positively evaluated characteristic that is only obliquely related to the speed of movement of the subject. It is clear that in such situations ‘quick’ is associated with ‘good’: note in particular Russian adjectives such as *sporyj* ‘efficient’ (where SPEED is associated with efficiency) and *rezvyj* ‘frisky’ (where SPEED is associated with youth and agile movements).

Given examples such as these, it is especially interesting to examine the history of the Common Slavic root *nagl-*, since it appears that it has taken the opposite path in its semantic development. In languages such as Old Russian, Ukrainian, Polish, Czech, Serbian etc. it is attested in a meaning approximating an immediate reading ‘precipitate, sudden, unexpected’. However, in Modern Russian (and in Bulgarian) this adjective has developed a meaning expressing a negatively evaluated human characteristic: ‘insolent, impudent’. Note this correspondence in the Russian-Ukrainian parallel corpus, where the Ukrainian adjective retains the older meaning, which is translated into Russian as *vnezapnyj* ‘sudden’:

- (4) Hurkotannya te, *nahle* i prorazylve, zahlušylo šum xurtovyny nadvori.

(I. Franko. *Na dni*. 1880)

Étot *vnezapnyj* i rezkij groxot zaglušil šum grozy na dvore.

(Translation by L. Ukrainka)

‘That sudden sharp crash drowned out the sound of thunder outside.’

When we take the massive evidence (across typologically diverse languages) of shifts of the type ‘quick agent’ to ‘high speed’ into account (of the type *rezvyj* ‘nimble’), this example seems to be a typologically rare specimen. This raises the question of whether there might be a different interpretation available—for example, that the negative assessment may be attributed rather to being ‘sudden’ and ‘unexpected’ than to being ‘fast’. However, we also see the same semantic shift taking place in modern Russian slang. Recently the slang verb *oborzet* ‘venture too far; get brazen’ has appeared, formed from the archaic and obsolete adjective *bórzij* (or *borzój*) which originally expressed high speed: ‘brisk, swift’. Today this word is used only as a substantivized adjective in its feminine form *borzája* ‘greyhound’. The semantic shift in the formation of the verb reflects the same semantic connection between HIGH SPEED *sensu stricto* and a negatively evaluated moral character.

In general, such negative connotations are not isolated examples. They can also be found, for example, in French, where there are many expressions like *aller plus vite que la musique*, lit. ‘go faster than the music’ (= ‘be in too much of a hurry, jump ahead of things’), *il y va un peu vite* ‘he’s rushing things’, etc. Other examples are the Russian negative intensifier *šibko*, as in *šibko umnyj* ‘mighty smart’, which carries an ironic negative evaluation, as well as constructions with the intensifier *bol’no* ‘painfully’, which also bears negative affect: *bol’no bystryj / šustryj / prytkij* ‘too smart’ (negatively). It is quite possible that increased activity and excessive haste can also be perceived as negative characteristics, in which case ‘quickly’ is more likely to be interpreted as something bad than as something good.

Thus we assert that the concept of TIME (at least in the domain of SPEED) can serve both as the goal of a semantic shift and as its source, despite the fact that the latter option has often been overlooked by scholars: ACTIVE AGENT → HIGH SPEED (*živoj* ‘alive’, *bodryj* ‘vigorous’ → *živo*, *bodro* ‘quickly’) & HIGH SPEED → ACTIVE AGENT (*naglo* ‘suddenly’ → *naglyj* ‘insolent’). From a theoretical point of view we observe that this is an interesting case of a ‘bi-directional’ metaphor that attests to the salience of the link between two domains. Apparently this metaphor does not assume that either one of the domains is semantically more primary than the other one, despite the fact that it is often claimed that, for example, SPACE is more primary than TIME.

Another important fact that is highlighted by these examples is the correlation of the meaning of HIGH SPEED not only with ‘positive’ characteristics of a quick agent, but also with ‘negative’ characteristics of an agent that is abrupt and rude.

6 Conceptualization of LOW SPEED

The domain of LOW SPEED is much more restricted. In Russian (as well as in some other Slavic languages), there is really only one main lexical unit: *medlennyj* ‘slow’, plus a few synonyms such as *meškotnyj* and *otstalyj*. Numerous extensions of this semantic field are taking place in Russian via metaphorical ‘borrowings’ from other semantic fields. For the most part, the source domains are the same ones that we find for HIGH SPEED: primarily the characteristics of ‘slow’ agents and secondarily those of ‘slow’ situations.

As far as agents are concerned, the metaphorical strategies that apply to HIGH vs. LOW SPEED are rather different, at least for Russian. Human qualities are more rarely used to express ‘slow’ (cf. *lenivyj* ‘lazy’, *sonnyj* ‘sleepy’⁶). This meaning is more often represented by words that express the general physical qualities of non-human referents, such as *vjalyj* ‘faded’, *tixij* ‘quiet, soft, gentle’. Note this use of the word *vjalyj* / *vjalo* (in this example it appears as an adverb):

- (5) [...] pristupili k besede. Sperva ona šla nemnogo *vjalo*, no skoro oživilas’.
(I. S. Turgenev. *Nov*’. 1877)
[...] they entered into conversation. It was a little *slow* at first, but soon grew livelier.
(Translation by R. S. Townsend)

However there is a much larger set of non-anthropocentric metaphors for ‘slow’. In particular, in the Slavic languages this meaning is expressed by roots such as *mal-* ‘small’, *vol-* ‘free, loose’ and, more rarely, *tix-* ‘quiet’ and *leg-* ‘light’. In Czech, Polish and Ukrainian these roots derive adverbs used primarily to express ‘slow’, cf. Cz. *pomalu* ‘slowly’; Pol. *powoli*, *wolno*, *powolno* ‘slowly’; Ukr. *zvil’na*, *povil’no*, *povoli*, *povolen’ky*, *pomalu*, *pomalen’ku*, and *potyxon’ku* ‘slowly’ (the latter also with the meanings ‘gradually’); Rus. *pomalen’ku* ‘slowly, little by little’, and also *polegon’ku* and *potixon’ku*, both used primarily to mean ‘slightly, gradually’. Note the following typical example from the Russian-Ukrainian parallel corpus in the RNC:

- (6) *Povolen’ky* sxod’tes’ i nahanjajte joho na mene. Ja ne promažu. A ty, Petre, id’ sobi *potyxen’ku* dorohoju na spivaj, ščob vin na tebe pogljadav.
(Ostap Vyšnja. *Vovk*. 1956)
Pomalen’ku sxodites’ i nagonjajte ego na menja. Ja ne promažu. A ty, Petro, ezžaj sebe *potyxon’ku* po doroge, napevaj, čtob on na tebjja posmatrival.
(Translation by E. Vesenin)
‘Come together *little by little* and chase it [the wolf] to me. I won’t miss. And you, Peter, go *slowly* down the road and sing, let it see you.’

It is very interesting to examine situations that are construed as prototypically (too) slow and long from the perspective of natural language and which can be reconstructed by tracing back the etymology of the Slavic languages. For example, *kopat* ‘dig’ yields *kopat’sja* ‘be long,

⁶Cf. also the most common word for ‘slow’ in Chinese, 慢 *màn*, which goes back to ‘impolite, irreverent; careless’.

linger' and *kopotlivyj* 'lingering'; and *tjanut'* 'pull, draw, drag' yields the reflexive *tjanut'sja* describing an object that can stretch like rubber and metaphorically 'last, linger' (situation is perceived as if the whole event is stretched) and *tjagučij* 'lingering, long-winded'. Both of these situations can occupy a rather long time span and they usually involve a long series of monotonous slow movements. In this connection it is worth considering the semantic development of the adjective *tugoj* 'tight; tough' and its adverbial form *tugo* 'tightly' since these words are also etymologically related to *tjanut'*: the meaning 'slow' was strongly associated with these words in the XIX century, but it is fading out in Modern Russian:

- (7) Tak šli dni—*tugo*, nerovno, no ne skučno. (I. S. Turgenev. *Nov'*. 1877)
 Thus the days went by *slowly*, with little variety, but with sufficient interest.
 (Translation by R. S. Townsend)

7 Further semantic development and grammaticalization paths

In order to understand the cognitive connections that are relevant for a concept like SPEED, it is interesting to evaluate the possibility of a further semantic development of corresponding lexical units, which proceeds to the point of producing grammatical (or nearly-grammatical) markers. Our research has revealed two main directions for their development.

The first direction leads to the formation of intensifiers and stems from contexts in which SPEED is understood as the duration of a standard instance of the situation, as in Polish *bardzo* 'very' described below. The point is that HIGH SPEED is associated with compression and thus engenders the idea of intensification.

The second direction of semantic development leads to the formation of temporal / conditional connectors, as in Polish *skoro* 'if' described below. These are motivated by the meaning of immediacy, thanks to the concept of 'short distance'.

Thus we see that in both cases we are dealing exclusively with meanings of HIGH SPEED. We have no or very little evidence of LOW SPEED expressions that have developed in this way. It is remarkable that the two lexical meanings of the key words for HIGH SPEED ('rapid' and 'soon', see Sect. 3) that we identified on the basis of their contrasting linguistic behavior are often found in one and the same lexeme as witnessed in *skoro* and similar units. This fact provides additional confirmation of dissimilarities in these meanings of duration and immediateness, since each one has its own characteristic path of semantic development. This means that native speakers are clearly aware of the given semantic differences even when they are not formally distinguished.

The story of **bъrz-* 'swift, fast' in Slavic is an example of the intensification type of development. Whereas we see the original meaning of this root in Bulgarian *bърз*, Serbian *brz*, and Old Russian *brъzъ*,⁷ it has yielded an intensifier *bardzo* 'very' in Polish. Another example of this type from the history of Russian is the adjective *šibkij* which is now rarely used in its original meaning 'quick'. In modern Russian it has been preserved almost exclusively as a negative intensifier *šibko*, as we see in colloquial constructions such as *šibko umnyj* ≈ 'too clever by half', as we noted above among examples of the development of negative connotation for words denoting HIGH SPEED.

The story of Slavic *skor-* 'quick' illustrates the grammaticalization path for the meaning of high speed that proceeds through the IMM-value to become a connector. In Russian this

⁷For the modern Russian continuation of the root *borz-* and its derivations, see Sect. 4 above.

lexeme has for all practical purposes lost its original meaning of duration and is used primarily to indicate a short distance (\approx 'soon'). The various Slavic languages give evidence for all the stages in the long semantic evolution of this adjectival root,⁸ on its way from expressing HIGH SPEED to becoming a discourse connector. In Russian and Bulgarian this root still means 'fast', but also 'soon'; in Serbian it has shifted to express 'recently'; the next stage of semantic evolution is shown in Slovak, Czech and Polish where it expresses 'almost', 'as soon as', 'if' (the latter in Polish; cf. also Russian *kol' skoro* 'if'). With regard to the latter, note the parallel with the German *sobald* 'as soon as; if only', derived from *bald* 'soon'. Compare these Polish and German examples:

- (8) [...] zima, zima, // jaka tam zima! // *skoro* jak majowy słowik śpiewa.⁹
 'winter, winter, // how can you call it winter! // if it's singing like a nightingale in May.'
- (9) Alle deine Verse strotzen von diesen artigen Dingen, die ganz passabel ins Ohr fallen und mit Nutzen verbraucht werden, *sobald* man nichts weiter dahinter sucht.
 (RNC: E. Th. A. Hoffmann. *Klein Zaches, genannt Zinnober*. 1819)
 'All your poems abound with these nice things which are pretty good for the ears and can be used profitably, *as long as* one does not look for anything else behind it'.

It is important to note that the shift from the meaning 'quick' to the meaning 'immediately after' is possible not only for lexical units, but also in the domain of grammar, since in some rare cases the meaning of HIGH SPEED has been grammaticalized, and here we find considerable typological variation.¹⁰ There is an interesting illustration of this shift in certain verbal constructions in the Romance languages that has been treated in detail by Squartini (1998). From the morphological perspective, we see some variation in the analytical pluperfect formed from the less common perfective (instead of the more usual imperfective) form of the auxiliary verb as in the *passé antérieur* in French (*eut mangé*) and its correlates in Spanish (*hubo comido*) and Italian (*ebbe mangiato*). Squartini shows that in the early stages of use of these constructions it is the meaning of completion of the action within a short interval that is relevant. It is only in the modern Romance languages that a relative tense meaning referring to (immediate) precedence appears, and that is what these constructions are used for today.

8 Tense and Aspect

Our goal was not merely to explore the semantics of SPEED as a linguistic concept. We wanted to establish the degree to which concepts in natural language are realized in the relationship

⁸According to etymologists, this Slavic root has a long prehistory in Indo-European as well. The most widely accepted hypothesis is that this root is connected to a verb meaning 'jump', and also to some names of insects, lizards and small birds (cf. the etymological parallels cited by Fasmer (1986) such as Slavic **asker-* 'laccertian, lizard-like', Lithuanian *skėrys* 'locust', Greek *skairō* 'jump' etc.). However Varbot (1997) suggests an alternative, namely an etymological relationship to the verb *kornat* 'cut'. As we have seen, from a typological perspective, both verbal roots could in principle serve as possible semantic sources.

⁹http://www.kigalczynski.pl/wiersze/sanie.html?p=_wi (26 July 2013).

¹⁰Thus, various verbal markers with the meaning 'quickly' (sometimes along with 'not long', 'once', 'half-steam' etc.) are attested in Eskimo-Aleut, Ob-Ugric, Polynesian and elsewhere. In Slavic, the suffix *-nu-* conveys roughly the same cluster of meanings (cf. Plungjan 2000 for more detail; about *nu-*verbs in Slavic see recent contributions by Makarova and Janda 2009; Kuznetsova and Makarova 2012).

between *SPACE* and *TIME*, which in a scientific view of the world also includes *SPEED*. In order to achieve this we have examined, primarily on the basis of Russian data, all of the cognitively salient semantic relationships that are characteristic for the parameters of *HIGH* and *LOW SPEED*, namely:

- models for the development of polysemy for words meanings ‘quick’ and ‘slow’;
- semantic sources for the development of corresponding meanings via (predictable) semantic shifts;
- semantic and grammatical domains that result from the further development of meanings relating to *SPEED*.

Our data show that as a whole, the domain of *SPEED* is semantically very unstable, drawing upon various metaphors and motivating a wide variety of lexical and grammatical output. It turns out that *HIGH SPEED* is cognitively a more significant domain with more dynamic and extensive structure for various semantic fields: ‘quick’ has many more relations to other semantic fields than ‘slow’. Our analysis shows that these relationships are nevertheless not random. Instead they are motivated by semantic construals of *SPEED*. For this reason, for example, the synchronic distinction between a durative and an immediate meaning is correlated with the difference in the directions of further historical development. Consequently, we can expect that patterns established by research on one language will, to a greater or lesser degree, be repeated with some certainty in other languages, and the modest typological data reported in this article confirm this claim.

It is remarkable that at least in Russian, and possibly in other languages, *SPEED* is not directly related to *SPACE*: its sources are not spatial. They are either fast or slow situations or, metonymically, fast or slow agents (objects). However, this research clearly shows that *SPEED* is related to *TIME*, but since it is sensitive to actionality, it is closer to aspect than to tense. This is evident to some extent in the subsequent emergent grammaticalization of units that express speed.

Thus we claim that *SPEED* is a diverse concept that is specific to *TIME*, and in some ways similar to the diverse concept of *AGE*, which we have also discussed above.

9 Conclusion

In conclusion, our analysis of natural-language constructions that denote *SPEED* has established that the concept of *SPEED*

- (a) actually belongs more to the domain of time (in the broad sense of the word) than to that of space as is commonly assumed based on the analogy taken from the study of physics on which we base our understanding of the world;
- (b) describes in language the relative (in comparison with a norm) duration of a situation, or the temporal distance from the moment of speech to its onset;
- (c) is not directly connected to the domain of space, judging from the behavior of natural language lexemes with corresponding meanings, their semantic sources and models of polysemy and semantic evolution; in other words, we have not found evidence of the mappings that would be expected given the *TIME IS SPACE* metaphor;
- (d) can serve as evidence that there is no specific universal connecting the domains of space and time.

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