

Formal mismatches and functional advantage in syntactic change:

The case of Old and Middle Russian non-verbal predicates*

Nerea Madariaga

University of the Basque Country

Summary. This paper relies on the idea that syntactic change stems from linguistic factors that are very different in nature and, consequently, trigger different results. More specifically, I distinguish the causes, processes and results related to two different kinds of syntactic change, a ‘formal’ type of change vs. a ‘functional’ one. The hypotheses pursued in this paper are the following: (i) Mismatches between the formal features a learner has acquired and certain data she receives during the language acquisition period lead to a syntactic change type, which restructures completely the syntactic derivation involved; (ii) The advantage of parsing a variant over parsing another variant triggers a different kind of change, namely one that affects specific instances or uses / registers of the crucial syntactic structure. To illustrate this, I will analyze the role of functional advantage and formal changes in the historical development of the case system of Russian non-verbal predication.

Key words. Syntactic change, formal mismatch, functional advantage, case feature, theta-role, parsability, Old Russian, Middle Russian.

* I would like to thank John Bailyn, Iván Igartua, Joseph Salmons, Myriam Uribe-Etxebarria and three anonymous reviewers from *Diachronica* for their valuable comments on this paper or previous versions of it. My gratitude to the audience of the panel on Diachronic Slavic Historical Syntax at the AAASS 2008 *Convention* for their comments on my presentation. This work is part of the FFI2008-03816/FILO and the FFI2008-04786/FILO research projects, funded by the Spanish Ministry of Science and Innovation, and has been supported by the research group on historical linguistics GIC07/89- IT-473-07 and the research group on formal syntax HM-2009-1-1, HM-2008-1-10 (both funded by the Department of Education, Universities and Research of the Government of the Basque Country).

1- Introduction

This paper is a formal study on two interrelated changes that took place in the history of Russian,¹ which can shed some light on the distinction between specific formal and functional motivations that trigger syntactic change. These two changes involved case marking of non-verbal predicates; the first change took place around the 12th century, and consisted of the replacement of case marking on noun predicates (marked so far with the same case as its antecedent in the sentence, which is commonly called *second case*; cf. example 1a) by instrumental case marking (ex. 1b).²

(OR: *Laurentian Chronicle*, 29b)

(1) a. *Бѣ Кайнѣ ратаи, а Авелѣ пастухъ.*

was Cain.NOM farmer.NOM and Abel.NOM shepherd.NOM

“Cain was a farmer and Abel, a shepherd.”

¹ The periods of the history of Russian mentioned in this paper are the ones I will refer to as Old Russian (OR) and Middle Russian (MR). Old Russian or Late East Slavic (11-14th centuries) included what would later become the Russian, Ukrainian and Byelorussian languages. At this stage, Russian, Ukrainian and Byelorussian were dialects of Early Old Russian; their differentiation became noticeable in the last part of this period, the period of Late Old Russian (13-14th centuries). The first case study analyzed in this paper took place during the transition from Early Old Russian to Late Old Russian. The second change analyzed here happened during the transition to the following period, Middle Russian (14-17th centuries), which was the language of Moscow Russia, separated from the Ukrainian and Byelorussian languages. Later on in this paper, I will provide examples from Old Church Slavonic (OCS), which was the South Slavic language in which the earliest Slavic texts were written (starting from the 10-11th centuries).

² With regard to the sources of the historical texts used in this paper, I will provide “direct” examples, taken from old texts, as well as “indirect” examples, in the sense that I quote them from some other work, which will be mentioned next to the example. The sources of direct examples in this paper are the following ancient chronicles: the *1st Novgorod Chronicle* (13-14th centuries), the *Laurentian Chronicle* or *Primary Chronicle* (14th century), and the *Hypatian Chronicle* (ca. 1425), as well as the *Lay of Igor’s Campaign* (end of 12th century, copy of the 15th century).

(Present-day Russian)

b. *Kain byl zemledel'cem, a Avel' byl pastuxom.*

Cain.NOM was farmer.INST and Abel.NOM was shepherd.INST

“Cain was a farmer and Abel, a shepherd.”

The second change started in the 13-14th centuries, it was not as abrupt as the previous one and, in fact, was never fully completed; it consisted of the same case marking replacement –second case with instrumental case–, but this time on adjectival predicates (ex. 2).

(OR: *1st Novgorod Chronicle*, 140b)

(2) a. *...zane knjazb ešče malb bjaše.*

because prince.NOM still small.NOM was

“Because the prince was still young.”

(Present-Day Russian)

b. *Knjazb byl ešče malen'kim / malen'kij*

prince.NOM was still small.INST (UNMARKED VARIANT)/NOM (MARKED VARIANT)

“The prince was still young.”

Even though these two changes have been often taken to be quite the same, except for the period in which they took place (Švedova 1952, Borkovskij & Kuznecov 2004 [1963], Lopatina 1968, Nichols 1981, Krasovitsky *et al.* 2008), I will show that, quite the contrary, not only the period, but also the trigger, process and results of these two changes was completely different.

More specifically, I will claim that the first change described here was triggered by a mismatch between the formal features learners of Old Russian had acquired and certain data involving noun predicates constructions that those learners received. This mismatch led to restructuring completely the syntactic derivation of these constructions. On the other hand, the second change described here will be proposed to have a

different source; namely, I will claim that it was triggered by the functional advantage of parsing an already existing variant –instrumental case marking– over another existing variant –second case marking–. This second type of change affected only some instances of the crucial structure and / or specific registers of the language.

2- Some preliminary notions and assumptions about syntactic change

In this section, I will introduce the crucial notions and assumptions that underlie the proposal made in this paper. For ease of exposition, I will present most of these notions and assumptions in contrasting pairs of concepts and terms, going from general issues to more specific ones.

‘I-language’ vs. ‘E-language’: following Chomsky (1986), I will assume that I-grammars correspond to the linguistic competence of a speaker, and that they are internal mental systems, innate and/or acquired according to innate processes. On the other hand, E-languages will be taken to be the set of utterances produced by a speaker or a community of speakers, as objects external to the mental properties of an individual. Here are included the data that learners receive when acquiring a language –the output produced by the previous generation of speakers–.

Related to these notions, but not synonymous are the concepts ‘core syntax’ vs. ‘linguistic periphery’: the core syntax is the part of an individual’s grammar formed by the principles stemming directly from the U(niversal) G(rammar) and the parameter settings of the language as matured by that individual after the language acquisition period. In contrast, the linguistic periphery is a collection of “borrowings and historical residues” (Chomsky 1981) heavily conditioned by socio-linguistics, functional-

communicative factors and late acquisition, rather than by innate early acquisition processes.³

‘Early acquisition’ vs. ‘late acquisition’: one remarkable difference between the core syntax and the linguistic periphery lies, therefore, in the distinction between early and late acquisition. As is commonly assumed, early acquisition of a language by a learner is usually completed by the age of 4 –the ‘critical period’ –, and is guaranteed for children up to the age of 6 (Newport & Gleitman 2000, Pinker 2000). According to the innatist theory of language acquisition (Chomsky 1959, Fodor 1975), this is taken to be an innate process, in which two elements are needed (cf. e.g. Kirby 1999): a richly specified innate ‘L(anguage) A(cquisition) D(evice)’ in combination with the ‘P(rietary) L(inguistic) D(ata)’ a learner receives from his/her linguistic environment. I will locate formal processes of syntactic change at this point of the acquisition process.⁴ After the

³ The properties of linguistic peripheries seem to be quite consistent cross-linguistically, as it can be inferred from different works on core syntax and its limits, such as Baker (1991), Lasnik & Sobin (2000), Sobin (1997), and Uriagereka (2004). The properties of linguistic peripheries are shown in detail in Madariaga (2008) and can be roughly defined as the following ones: peripheral or non-core phenomena are often inconsistent or “contradictory” with the grammar of the corresponding language; they display late or very late acquisition –after the critical period of acquisition or even acquisition as an adult–; their acquisition is not regular –natural–, but based on repetition, memory and frequent exposition to the input.

⁴ In this paper, I analyze data from old periods of the history of Russian relying on an acquisitional view of linguistic change. I am aware of the fact that it is impossible to check one’s hypotheses about past periods of a language in the usual empirical way, i.e. by appealing to native speakers and obtaining judgements of grammaticality, since there are no living native speakers of ancient languages whose grammatical intuitions could be checked. I am thus forced to obtain data from old documents, trying to choose non-literary texts (e.g. chronicles) and contrasting the structures found in texts with the empirical data from textbooks, such as Borkovskij (1978, 1979), Borkovskij & Kuznecov (1963), Lopatina (1968, 1980), Sannikov (1968), etc, which provide accurate percentages and descriptions of the use of a certain

crucial parameters have been fixed, late acquisition is restricted to “peripheral” aspects of the language, such as specific words, registers, specially difficult or rare morphemes, but not core syntax (Crain & Thornton 2003, cf. also fn. 3). Here I will posit the second type of syntactic change reviewed in this paper, the one triggered by functional factors.

‘Reanalysis (or “new analysis”) in core syntax’ vs. ‘functional advantage of one of two variants’: adopting an adaptive view on historical change, I will claim that any “difficulty” in processing the Primary Linguistic Data (PLD) during the acquisition period can be diachronically eliminated from a language or adapted to it. In the generative framework, it is commonly assumed that, when learners aim to converge on a target grammar and are confronted with a conflict in the analysis of the PLD, they can choose new ways of parsing those data (Lightfoot 1999, 2002, 2006, Longobardi 2001, Newmeyer 1998, Pintzuk, Tsoulas & Warner 2000, Uriagereka 2004). Learners who innovate in parsing those PLD acquire, as a result, a grammar different from the one that produced the original data –which served as the learners’ input–. This effect is known as the discontinuity of transmission of a language between generations.⁵ When

structure in large samples of old texts, differentiating periods and typology of texts. The extrapolation to Modern and Present-day Russian is also useful, specially, when talking about differences in registers, marked vs. unmarked variants, etc.

⁵ *Mutatis mutandi*, this is also true for many authors within the framework of functional linguistics: for them, languages change according to the cognitive requirement that languages must observe a correspondence between forms and functions (Anttila 1989, Langacker 1977): when some disturbing element is introduced into a language, the language must change and eliminate the imbalance. For example, the Abduction Theory, proposed by Andersen (1973), and subsequent revisions of it, mainly the theory of the Actualization, in Timberlake (1977) and Andersen (2001), is closely related to the view that, in language change, there are continuous interactions between the external input and the internal analysis of that input. In fact, Andersen (1973) is the first paper proposing that reanalysis arises from the discontinuity of transmission between generations.

this “new analysis” of the data by learners affects core parameters and completely restructures the grammar or constructions a learner is acquiring, is when I will call it ‘reanalysis at the core syntax level’.

Following Fodor (1998) and Lightfoot (1999), I will assume that language acquisition proceeds according to a cue-based model.⁶ Cues in the PLD are unambiguous, so that the child fixes the “expected” structure or parameter as soon as she detects the crucial cue in the PLD.⁷ But yet we say that learners can have problems in interpreting the PLD: where is, then, the initial trigger of a change? I assume this initial trigger is outside the core syntax, in the small modifications of the PLD that can be produced by language contact, sociolinguistic fashions, drops in frequency, and other factors derived from E-language and performance; previous unrelated grammar changes can also have an effect in the cues a learner can eventually detect in the PLD. To sum up, any modification that condition the shape of an adult’s output, no matter where it comes from, can eventually give rise to “new” cues in the learner’s PLD, and lead to reanalysis. So reanalysis affects the I-grammar –it happens in the LAD and shapes the core syntax–, but E-languages have their role in change, as they yield the initial trigger of change.

⁶ A “cue” is defined as a chunk of structure or a grammatical token derived from the input, a mental representation, which results from hearing, understanding and parsing utterances during the period of language acquisition. They are second-order data, as they are not immediately accessible to learners, but need some previous analysis to be detected (Lightfoot 2006). First-order data in the PLD also can be available for a learner, namely, overt vs. null phono-morphological information, as I will show in this paper.

⁷ Researches on this field talk about one cue to fix each macro-parameter; however, in Madariaga (2008), I show that a learner needs more than one cue to fix certain (micro-)parameters and, conversely, that learners must loss all the cues pointing to certain “complex” structures in order to be able to reanalyze – “newly analyze” – it. This is the view I will adopt in this paper.

But E-languages contribute not only to the initial triggering of a reanalysis, but also operate on the outputs of reanalysis, as a consequence of change. After reanalysis has taken place, a situation of double coding or competing grammars can arise. In this case, two different results can be obtained: (i) The reanalyzed form presents a functional advantage with respect to the old one; the new variant is fed by the speakers' performance, until the more advantageous variant replaces the less advantageous one;⁸ (ii) One of the variants acquires a semantic specialization, which licenses its "survival" alongside with the other variant.

The 'functional disadvantage of a variant' can reduce its use by a linguistic community, until the variant disappears. This can happen, for example, when the variant Y has more s(yntactic)-homophones than the variant X.⁹ In other scenarios, less

⁸ The learners' preference for one of the variants must be explained by resorting to the functional advantage that some variants seem to have (cf. references to such processes in Newmeyer 1998: 105ff). In these cases, it has been argued that the most "advantageous" variant is the one that will be the easiest to be acquired by learners (Kroch 1989, Yang 2000, 2002). The functional "advantage" of a grammar / variant, just as any other aspect of E-languages, is sometimes difficult to be measured. Here, the functionality of a grammar will be viewed as a very specific notion, namely, the following one: a grammatical variant X is more functional than a variant Y iff there is at least one type of word strings in the language that can be disambiguated by X, but not by Y—for a more detailed account, see Madariaga (2008).

⁹ S(yntactic)-homophones are defined as word strings that can be interpreted by learners as corresponding to two or more different structures, in case they have not still detected the correct cue for the corresponding structure—or have not matured that structure yet—. It is a known phenomenon in language acquisition: when a child has not matured a given grammatical aspect, she can parse the input received "analogically" to other structures she has already detected—according to a cue-based acquisition system—; cf. examples of s-homophones in the acquisition of Russian case in Babyonyshev, Ganger, Pesetsky & Wexler (2001).

“advantageous” data can also be preserved in the language as fossils, but not as a part of the core system. In the case of ‘functional advantage of a variant’, we obtain the opposite effect: the word string can either undo an existing s-homophony, or specialize a new meaning, favour the assignment of a convenient category to an element during acquisition, eliminate unparseable null morphemes of the PLD, etc.

‘Formal vs. functional syntactic change’ in the history of a language: related to the previous pair of notions, reanalysis in the core syntax vs. the prevalence of a variant over another for functional / parsing reasons result in two different kinds of changes that affect syntax at different levels: the first type of change takes place during the early acquisition period –and restructures core syntax–, while the second one is acquired later in life, often leads to semantic specialization of the variants, or remain in the linguistic periphery in the form of competing variants, one of which, for example, corresponds to a neutral or colloquial register of the language, while the other is perceived as old-fashioned or even a fossil.

An additional difficulty of my proposal, when applied to historical data, is how to distinguish the two types of change I propose in old texts. For this task, I compare the characteristics of peripheries vs. core syntax in living languages (cf. fn. 3) with the descriptions of the phenomena studied in this paper (Borkovskij 1978, 1980, 1983, Borkovskij & Kuznecov 1963, Čagiševa 1968, Georgieva 1952, Krasovitsky *et al.* 2008, Lopatina 1966, 1968, Nichols 1981, Potebnja 1958 [1888], Sprinčak 1960, Švedova 1952, Xodova 1960), and discovered that the change that happened first chronologically –that affecting noun predicates– displayed the characteristics of a change at the core level, while the second change –that affecting adjective predicates– shares the properties of linguistic peripheries and late acquisition, as we will see later on (see more details in Madariaga 2008).

‘Formal vs. interface (features and cues)’: lexical items are assumed to be provided with a collection of semantic, phonological, and formal features; the last ones are most relevant to syntax and syntactic change, but some of the so-called ‘interface features’ – semantic and phonological– can be also crucial when acquiring certain areas of a grammar, where second-order and interface features are closely interrelated.

On the other hand, as I argued before, there are cues in the PLD that signal the way learners must acquire a grammar. These cues are defined as tokens included in the PLD that provide the learners with second-order –syntactic– information, but maybe they can also convey first-order –phono-morphological– information, or rather a combination of both (see fn. 6). In this sense, learners have access also to certain LF (semantic) / PF (phonological) information that they detect in the PLD received and help them to fix some crucial parameters.

The relation between features and cues is the following: learners scan the PLD and detect second-order cues and LF/PF cues –the former are “direct”, while the last ones stand for the interface levels with the core syntax learners must acquire–; this makes possible for learners to fix parameters, and acquire the features they target on.

‘Formal mismatches’ vs. ‘parsing advantage’ of a variant: in this paper, I will claim that the acquisition of a structure in a way different from that of the previous generation (i.e. reanalysis) can originate in a mismatch between the syntactic structure and its semantic or phonological (LF/PF) interpretation during the acquisition period (Madariaga 2008). There must be an unambiguous relation between the interface cues and the underlying formal features; otherwise, any conflicting element in the PLD must be excluded from core syntax –adapted to it or not acquired–.

I propose that this happens when the syntactic features a child acquires and the interface information she/he detects in a given string of the PLD (i.e. the semantic or

phonological features related to those syntactic features) do not match totally. Such a mismatch can but need not trigger syntactic change; namely, I will argue that a conflicting LF / PF feature in the PLD must be either eliminated or acquired in a new way (leading to syntactic change), or be put outside core syntax (be “relegated” as a part of the linguistic periphery).

Syntactic change takes place as a result of one of the following factors: (i) the loss of all the cues pointing to the original structure (results in a formal mismatch and reanalysis, as proposed before), or (ii) the functional advantage of a reanalyzed form, when the learner is confronted with two variants (being functional advantage in a situation of competing variants defined as the ability of one of the variants to disambiguate s(yntactic)-homophonic contexts).

In this paper, I will illustrate both types of change: (i) syntactic change at the core level forced by a parsing conflict in the PLD –a mismatch between the formal and LF / PF cues a learner receives–; it is the case of nominal predication in Old Russian, and (ii) syntactic change derived from competing structures / variants, where one of them displays some functional “advantage” with respect to the other variant; this is the case of adjectival predication in Middle Russian.

‘Case marking’ (formal features) vs. ‘theta-roles’ (semantic features): the case studies offered in this paper affect a very specific area of syntax and syntactic change: case marking in predicational relations. If, as we said, syntactic change affects the features of the items that enter core syntactic relations, the basic core relations will also be affected by change. According to Collins (2002), these core relations must be, at least, theta-role relations, movement, agree, and selection.

In the case studies presented here, I will focus on theta-role relations, and will show that a mismatch arises when learners face apparently contradictory PLD –pieces of

information that can be interpreted as contradictory— about the formal case features involved in predicational constructions and their semantic interpretation —theta-role relations—. My tenet will be that a change in grammatical case is due to such a mismatch between the formal features involved in case marking and the thematic relations established between the case-assigning head and its case-assignee. Let us see how this works in the case studies under analysis here.¹⁰

3- Case study 1: syntactic change triggered by a mismatch in the PLD

My proposal is that the first instance of change I will analyze here is a change derived from a conflict in the PLD learners of Old Russian received; namely, that it was triggered by a mismatch between the syntactic structure and the semantic features (formalized as theta-roles) of predicational structures.

This mismatch produced a disorder of the kind introduced in the previous section, i.e. problems in parsing the PLD during the acquisitional period. As argued before, such problems are overridden by learners in different ways: mismatches between syntactic

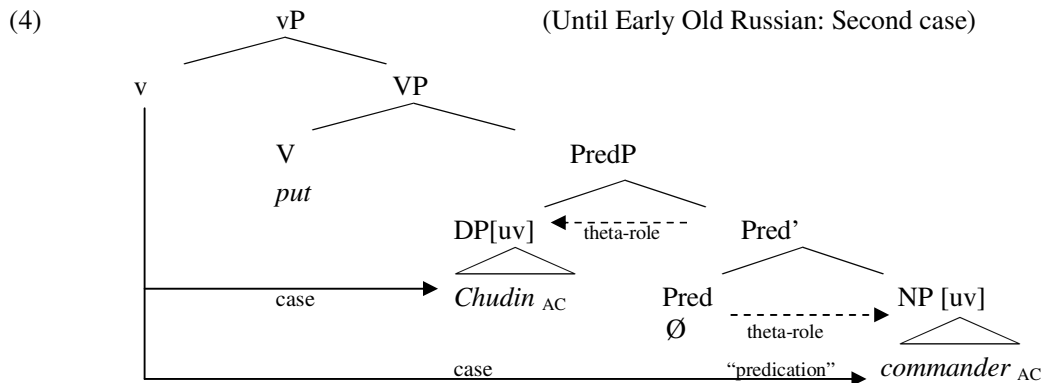
¹⁰ As an anonymous reviewer points out, there are similar examples of this in Germanic. One could be the reanalysis in the verbs with experiencers, such as *Me liketh > I like something* or *Me hungreth > I am hungry*. After the loss of the inherent case for experiencers, it could seem to learners as if something that received the role “experiencer” was tied to an accusative case, which was rather related to “theme”. The “theme” of the verbs that require an experiencer is identified with the stimulus rather than with the experiencer (*I fear dogs*), so the PLD in *Me liketh* could become confusing for the learners from the point of view of the semantic roles. Maybe because experiencers were located high in these structures, they were reanalysed as being in [Comp, T] and, therefore, tied to nominative case, as with the other experiencers (cf. *I hear, I see, I sleep...*), assuming Pesetsky & Torrego’s (2001) approach that case is the spell-out of a syntactic feature that has an interpretable counterpart —here, nominative is [uT] on the DP.

and LF / PF cues in the PLD must be either eliminated or acquired in a new way, or be put outside core syntax (be relegated as a part of the linguistic periphery).

Let us take, then, the origin and extension of the Russian instrumental predicate case to show this kind of mismatch. In Old Church Slavonic and Old Russian, all non-verbal predicates were encoded with structural case, usually called ‘second case’ –that is, the same case that encodes the antecedent of the predicate in the sentence. The examples in (1) illustrate two secondary predicates related to the internal argument of the sentence, both marked with second accusative case: (3a) is an example from Old Church Slavonic, and (3b), from early Old Russian:

- (3) a. *Ne možьno jestь postaviti jego popa.* (OCS, *Codex Suprasliensis*, 143b-144)
 not possible is put him.AC priest.AC
 “It is not possible to make him a priest.”
- b. *Narekь Čjudina vovodu.* (OR, *Hypatian Chronicle*, 306b)
 said Chudin.AC commander.AC
 “He designated Chudin as the commander.”

Here is the structure proposed for second case marking on the predicate NPs in (3):



In this representation, I follow Bowers’s (1993) structure of predication, as applied to Russian by Bailyn (2001). In addition, I assume Baker’s (2003) account for theta-roles in predicational structures; as Ns are provided with a referential index, which is satisfied by theta-marking (Higginbotham 1985), two theta-role relations take place in

structure (4), following Baker: (i) the N predicate “commander” establishes a semantic relation with a Pred(icator) head selecting it –let us call it a “predication” theta-role–; and (ii) the N predicate must combine with a Pred(icator) head –forming a Pred’– in order to be able to establish a theta-role relation with the subject of the predication *Chudin*. Case valuing on both the subject and the NP predicate is made a verbal head.

Second case as in (3) was the usual mechanism to mark non-verbal predicates in early Slavic. However, an innovation arose in OR: designative verbs could be combined with a NP of charge, kinship or profession, encoded with instrumental case, as shown in (5). This innovation was rare in early texts but, later in time, would get more and more attested in Russian:

(Laurentian Chronicle, 42b-43)

(5) a. *Volodimerъ že velikimъ mužemъ stvori togo i o[t]ca ego.*
 Vladimir part. great INST.SG manINST.SG made this.AC and father.AC his
 “Vladimir turned him and his father into important men.”

b. *Vy že kogo xoščete igumenom[ъ] imeti sobe, da i azъ*
 you part. whom.AC want abbot.INST to have -self.DT part. also I
bl[ago]s[lo]vlenie podať byx[ъ] emu. *(Laurentian Chronicle, 62b)*
 blessing give would him.DT
 “I would give my blessing to the one you would want to be your abbot.”

c. *...narek ju dъčerju sobe.* *(Laurentian Chronicle, 17b)*
 ...said her.AC daughter.INST -self.DT
 “He named her his own daughter.”

Potebnja (1958 [1888]) –backed by Vaillant (2002 [1948]) and Xodova (1960)–, proposed that these designative instances were the original structures from which Russian predicate instrumental case further spread. As they argue, these constructions resulted from combining a designative verb and an adverbial phrase marked with

instrumental case, which was interpreted as a regular modifier. Instrumental modifiers were common in early Slavic, as illustrated in the following examples from Old Church Slavonic in (6):

- (6) a. *Krvъъ tečaaše rěkami.* (OCS, *Codex Suprasliensis*, 53:27)
 blood.NOM.SG flew rivers.INST.PL

“Blood was flowing like a river.”

(OCS, *Codex Marianus*, Mk. 9:43)

- b. *Dobrěa ti estъ malomoštijъ vъ životъ vъniti.*
 better you is maimed.INST in life enter

“It is better for you to enter into life maimed”.

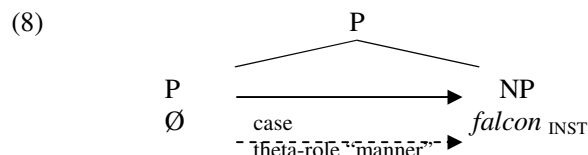
Such adverbial phrases had the meaning of ‘manner’ and ‘comparison’, and were regular adjuncts, which modified the verbal notion. Adverbial adjuncts are synchronically analyzed as PPs with a null prepositional head by van Riemsdijk (1978), and Kayne (1984). These null Ps have the ability of valuing different cases on their complements, as overt Ps do.

Following these authors, the structure I propose for the instrumental modifiers (adjuncts) is shown in (8), which corresponds to the modifier denoting ‘comparison’ illustrated in the Old Russian example in (7):

- (7) *Igorъ sokolomъ poletě.* (*The Lay of Igor’s Campaign*, 443)

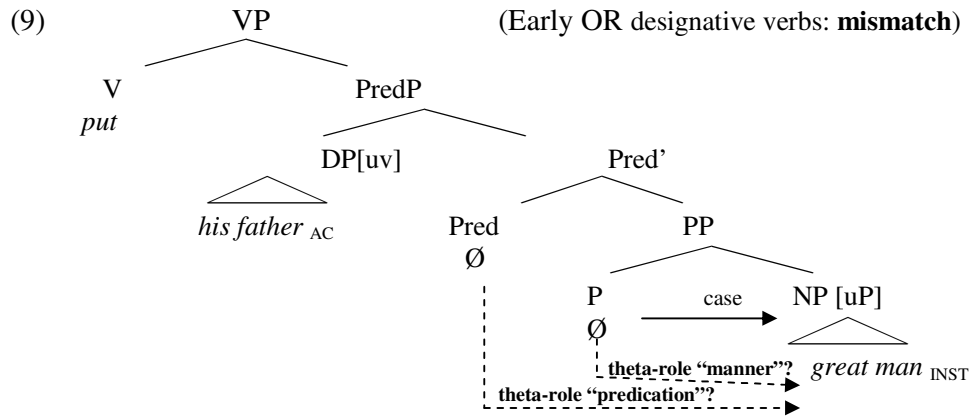
Igor falcon.INST flew

“Igor flew away as a falcon.”



Here, the null P establishes a semantic relation with the NP (let us call it a theta-role of “manner”) and, at the same time, values the case feature on it, which surfaces as instrumental case.

Inserting an instrumental PP like the one in (7) into a designative instance such as that one in (4) yields the structure represented in (9) below:



Structure (9) could confront learners of Old Russian with a mismatch between the case features present in the construction and its semantic interpretation –the theta-roles–. This mismatch can be described as follows: for learners that had already acquired the predicational structures of Old Russian, the head licensing instrumental case on the predicate NP needed to be the null P, because the Pred head was not a case valuer by this time (cf. structure 4 above). On the other hand, learners expected that this P should establish a semantic relation with the NP, as it was usual in structures like (8) –we represented this relation as a theta-role of “manner”.

However, given that these structures were predicative structures –the verb clearly was a designative one–, learners had to analyze them as having a Pred head that introduced the predicational part of the sentence, which had been so far establishing a semantic relation with the nominal predicate (represented as the theta-role “predication” in structure 4). In this way, learners could be receiving conflicting data: syntactic

features –case valuing– that did not clearly correspond to the expected semantic relations –theta-roles–.¹¹

I will show, as claimed before, that the conflicting elements in the PLD involving noun predicational case marking, were eliminated in the core syntax of learners. More specifically, I will argue that ‘reanalysis’ (viewed as “new analysis”) of the conflicting data took place in Old Russian because all the cues that had made so far possible to acquire structures of second case marking, such as (4), got lost or became undetectable, as I will explain in the following sub-sections. This reanalysis consisted in new analysis of the instrumental case as the case of NP predication at the core syntax level.¹²

¹¹ As an anonymous reviewer notices, constructions like the one in (9) are not banned in natural languages and are correctly acquired by learners of certain languages. For instances, sentences like *Put the book on the table*, where an overt P may assign case and establish a theta-role relation (“location”) with the NP, are fine in English or Russian. The reason why (9), unlike the *Put the book on the table* construction, was conflicting in Old Russian has a double-face explanation: (i) What originated a conflict in the PLD was the fact that learners did not expect the combination of a semantic relation of “manner” and that of “predication” –triggered by the insertion of an instrumental modifier phrase in a designative structure–, which was new in the language. It could be such an unexpected piece of data for them that they did not know how to parse it; (ii) There is another theoretical implication in structure (9) that the *Put the book on the table* construction lacks: the structure in (9) was difficult to be acquired because of the presence of two null heads in the structure (the null Pred and the null P). The presence of two null heads in such a small portion of structure was itself a problem; following Pesetsky (1995), more than two nulls in those conditions are highly undesirable and tend to be reanalyzed.

¹² Due to space limitations, I will not extensively show here that the result of this reanalysis displays the properties of a core syntax phenomenon from a synchronic point of view. In a nutshell, the replacement of NP predicates marked with second cases by instrumental ones was an abrupt change in Russian (Nichols 1973, Borkovskij 1978). Instrumental case as a NP predicate marker is systematic and obligatory; it is the only marking possibility on NP predicates with several exceptions, where second case, due to structural reasons, is obligatory instead. These exceptions are the following: equative and indentificative sentences,

Let us now analyze how NP predicates adopted this new instrumental case marking (examples 1b, 5), replacing the old second case marking (examples 1a, 3). This process took place in Old Russian when the cues that had so far signalled for an instrumental modifier in designative constructions, such as the one in (9), i.e. instrumental PPs inserted in a PredP construction, became undetectable for learners. In this paper, I will focus on two crucial cues: (i) the replacement of null Ps with overt Ps in Old Russian, and (ii) the arising of overt Pred(icators).¹³

3.1. *Overt prepositions*: After the 12th century, in Russian, the old ‘bare cases’ that encoded modifier NPs (analyzed here as PPs headed by null Ps) began to be replaced by PPs headed by overt Ps. As an illustration of this, it is worth mentioning that Zaliznjak (2004: 160-162) found only 25 of such modifiers headed by a null P –20 of them are toponyms– in the more than the 950 Novgorod birch-bark letters he analyzed (these letters are the earliest documents of Old Russian colloquial language). Moreover, all the

sentences with a null copular verb, nationality nouns and proper names, predicates introduced by an overt Pred(icator), child language, predicates related to oblique antecedent, quantificational predicates, predicates with imperfective verbs of motion and stance verbs. The specific structural conditions of these constructions ban the presence of an instrumental case and require structural case marking (accusative / nominative = second case), as shown in detail in Madariaga (2008).

¹³ Other cues that were lost by this time are detailed in Madariaga (2008): (i) the semantic role “manner”, typical for these PPs headed by a null P was not perceived as adequate in designative –predicative– contexts; (ii) another problem in the PLD was posed by the fact that these instrumental PPs with designative verbs produced an unusual effect: these verbs did never take PPs before (headed by either an overt or null P). On the contrary, these verbs used to take a PredP; (iii) in parallel, other secondary predicates, such as gerunds, lost declension as well as case agreement with respect to their antecedent in the sentence. In the same way as gerunds, instrumental NPs could have been analyzed as predicates related to an antecedent that did not “agree” in case with them.

25 examples are from very early letters (from the 11th century to the third quarter of the 12th century).

A similar observation can be made about the chronicles. Consider examples (10a) and (10b); two centuries separate the two copies of the *Novgorod Chronicle* that contains these examples. The Synod copy of the chronicle (the first pages were written in the 13th century) still displays a grammar with a locative PP headed by a null P (10a), while the more recent pattern of the Commission scroll (15th century) displays the insertion of the overt preposition *v* “in” before the locative NP (10b):

(1st *Novgorod Chronicle* - *Synod copy*, 2b-3)

- (10) a. *Vъ to že lěto založena bysť svjataja Sofija Nověgorodě.*
 in that part. year founded was saint Sophie Novgorod.LOC
 “In that year, Saint Sophie was founded in Novgorod.”

(1st *Novgorod Chronicle* - *Commission scroll*, 82b)

- b. *I založena bysť svjatyja Sofěja v Kievě.*
 and founded was saint Sophie in Kiev.LOC
 “And Saint Sophie was founded in Kiev.”

3.2. *Overt predicators*: The origin of Russian overt predicators (investigated in Present-day Russian by Bailyn 2002) can be traced back to the existence of some unstressed preposition and particles. Some overt Pred heads, such as the one in (11a), had their origin in the prepositions *za* and *vъ*. Other overt Preds come from unstressed particles, such as *že*, *bo*, *jako* (Lopatina 1980). These particles could be, for example, proclitic on a subject (11b) –the examples in (11) are from Borkovskij (1980).

(*Conquest of the Azov*, 17th century)

- (11) a. *A nas na Rusi ne počitajut i za psa smerdijaščago.*
 and us.AC in Rus not consider even za-PRED dog.AC stinking.AC

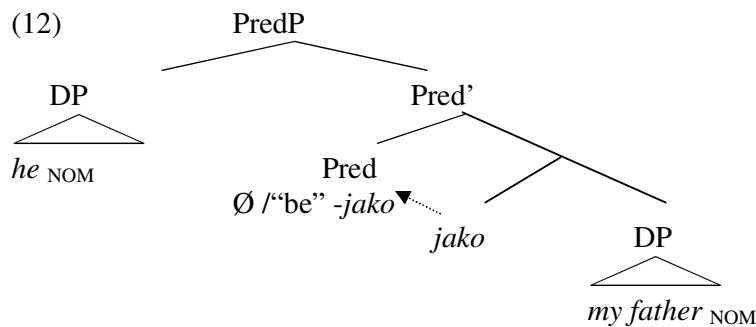
“They consider us in Rus less than a stinking dog.”

b. *Sii mi budetъ jako otecъ.* (*Lives of Boris and Gleb*, 113)

this.NOM me.DT will be as-Pred father.NOM

“He will be like my father.”

At a later stage, the copular verbs in present tense became null in most of their uses (Borkovskij 1978: 75ff); this made possible to reinterpret some of these unstressed particles as the overt Pred head of the PredP, following Whitman’s (2000) mechanism of ‘relabelling’, according to which an element –in the previous examples, the particle *jako* and the P *za-* incorporates the next higher head –Pred–, and then becomes reanalyzed as that head. This is shown in structure (12). In past and future tenses, where the copula was not dropped so often (though it could be dropped, too; cf. examples in Istrina 1923, Borkovskij 1978: 76), the unstressed particles simply incorporated into the overt Pred head, as shown in structure (12).¹⁴



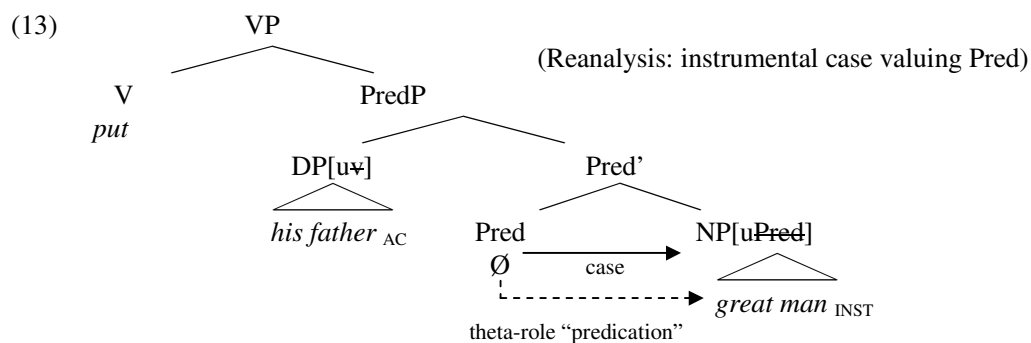
¹⁴ In formal frameworks, and for independent reasons, most authors analyze copular verbs in different languages as overt realizations of Pred heads (Bowers 1993, Bailyn 2001, Baker 2003). Descriptive works on the development of Old Russian predication also claim that Old-Middle Russian copula could have been a predication marker, rather than a verbal element (cf. Georgieva 1968: 35ff).

The replacement of null Pred with the overt Preds *jako / za / vč* + second case was completed by the 17th century (Glinkina 1968). According to Borkovskij (1980), the overt Pred that was first extended was *jako* “as”, in the 14th century.¹⁵

Adding the difficulty of parsing conflicting structures such as (9) to the loss of the crucial cues reviewed here, learners reanalyzed construction (9), i.e. began to acquire construction (13) instead. The new analysis of nominal predicational structures was a “simplification” of structure (9), obtained after the elimination of the conflicting

¹⁵ The cues previous to the change I am reviewing here got lost in the language because of independent reasons; as usual, anything that modifies the external shape of the PLD can have a direct influence in losing or creating new cues, which the learner detects. Thus, borrowings, drops in frequency in use of a certain form, phonological ‘wearing out’ of morphological material, lexical preferences of the speakers, etc. can give rise to changes in the cues in the PLD. Here, the first cue reviewed (replacement of null Ps by overt Ps) arose because of changes in language use; namely, there was a global rearrangement in OR of the prepositional system (Ps denoting place) and of the verbs of movement (Borkovskij 1978). A whole series of Ps was specialized with a meaning they had been secondary so far: the series *u / ot / k*, that had a neutral meaning (“in / from / to”), specialized for places in proximity and places related to people (“near / from the surroundings / towards”); what had been the series denoting place only with regard to the inside (*v* + locative / *iz* / *v* + accusative “inside / from the inside / to the inside”) started to be more and more used also with the neutral meaning of “in / from / to” and finally replaced bare local cases, which had become confusing for learners, especially when the use of verbs of movement without a preverb – indicating the type of movement with respect to a place – increased. The second cue, the insertion of overt predicators instead of null Preds happened almost in parallel to the insertion of overt Ps instead of null Ps because of the difficulty of parsing bare accusative NPs as predicates (generated by the conflict explained in this section). In this sense, overt predicators were just another way to reanalyze the conflicting structure. Other cues (cf. fn. 13) had similar independent origins: e.g. the loss of declension of gerunds was due to a drop in the use of gerunds in oblique cases, which finally led to the existence of a unique form for gerunds, the nominative form.

elements in the previous PLD: the null P (and its semantic relation or theta-role “manner”) were eliminated from the original structure (not acquired), while the null Pred was re-interpreted as the assigner of instrumental case on the NP predicate, and as the head that establishes a semantic relation with that NP (i.e. its theta-role assigner):¹⁶



Different kinds of features (semantic and syntactic) are reanalyzed in this process: with regard to semantic roles, the role “manner” disappears and the role “predication” remains as the only semantic relation between the nominal predicate and the functional head Pred. As for the syntactic features, the uninterpretable feature [uP] underlying structure (9) disappears, together with the head P, and [uPred] is checked instead.¹⁷ Morphological case on the DP (instrumental case), however, remains unchanged.

4- Case study 2: syntactic change originated in the functionality of a variant

¹⁶ This changes yielded structure (13), which is the same structure that Bailyn (2001) proposes for NP predication in the Present-day Slavic languages.

¹⁷ The case study presented here can be also explained as an instance of feature economy, based on the Later Merge Principle, following van Gelderen 2008: the output of the reanalysis (13) “saves” a semantic feature and a formal feature with respect to the previous structures (9) and (12), as well as a movement, because what was a P, either null or overt (merged low and then moved to Pred), merges in (13) directly as a Pred (generated higher).

As discussed in section 2, a second type of syntactic change, which we called ‘functional change’, obtains when two or more variants of a given constructions coexist, but learners show a preference for one of the variants.

This second type of syntactic change will be illustrated in this section with the help of the extension of instrumental case to adjectival predicates in Middle Russian. As we discussed in the introductory section of this paper, AP predicates never accepted the instrumental case marking in a systematic way from the viewpoint of syntax and grammar case (cf. different descriptions in Borkovskij 1978, Madariaga 2008, Peškovskij 2001 [1938], Šaxmatov 2001 [1941]).¹⁸

From the historical point of view, instrumental case spread to AP predicates in Middle Russian (around the 17th century), while the reanalysis of this case as the case of predication on NPs took place already in Old Russian, around the 13-14th centuries (Borkovskij 1978, Lopatina 1968). The question I will address in this section is, then, the following one: why did the reanalysis of the instrumental case take place on AP predicates later and less systematically than on NP predicates in Russian?

The usual pattern in Old Russian AP predication was second case, as illustrated in example (14a). Occasionally, a modal PP could contain an AP marked with an

¹⁸ The properties of instrumental case marking on AP predicates, described in the works cited, qualify this phenomenon as part of the linguistic periphery, which we described it in section 2 and, especially, fn. 3. Unlike the reanalysis of NP predicates, reviewed in the previous section (cf. fn. 12), instrumental case marking on AP predicates displays the properties of a peripheral phenomenon (see Madariaga 2008 for more details and references there): (i) instrumental case alternates freely with second case in many instances of AP predicates; (ii) in other cases where there is some differentiation, each case marking conveys a semantic or pragmatic nuance; (iii) in many cases, the use of second case vs. instrumental case on APs is simply a matter of style and register (being instrumental the unmarked variant, and second case, the marked variant).

instrumental of ‘manner’ or ‘comparison’ –similar to the modifier PPs including instrumental NPs reviewed before–, as in example (14b):

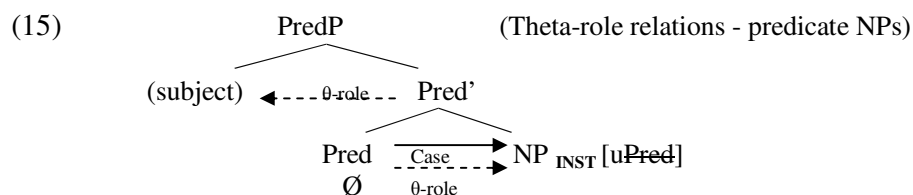
(1st Novgorod Chronicle Comm., 34-34b)

(14) a. Viděvъ ju cesarъ zělo *dobru* sušče licem.
 saw her.AC tsar very good.AC being face.INST
 “The king saw that she had a very beautiful face.”

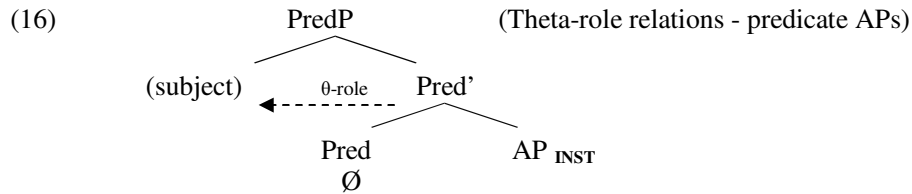
b. Ti bo mimohodjači proslavjaty čelověka po vsěm[ъ] zemljam[ъ]
 those part. who-pass-by make-famous person.AC in all lands
 ljubo *dobrym[ъ]* ljubo *zlymъ*. (Laurentian Chronicle, 80b)
 or good.INST or evil.INST
 “Because those who travel all over the country will make a person known as either good or evil.”

What I will show next is that examples like (14b) did not give rise to a parsing conflict, i.e. that the mismatch that took place in designative contexts including a predicate NP (structure 9) did not happen with AP predicates.

The lack of a mismatch in AP predicate contexts such as (14b) comes from the basic differentiation between the N and A lexical categories. According to Baker’s (2003) account, both lexical categories differ in that Ns establish a semantic relation with a head (i.e. receive a theta-role) to satisfy their referential index –even when they are predicates; cf. structure (4)–, while As never do so. The set of ‘theta-role relations’ which holds in nominal predication is captured by the structure in (15):



Adjective predicates, on the other hand, lack a referential index and, therefore, do not establish a semantic relations with the selecting head (i.e. do not receive a theta-role from Pred). The only theta-role relation that holds in this construction is the one established between the subject of the predication and the Pred' complex (Baker 2003), as illustrated in structure (16):



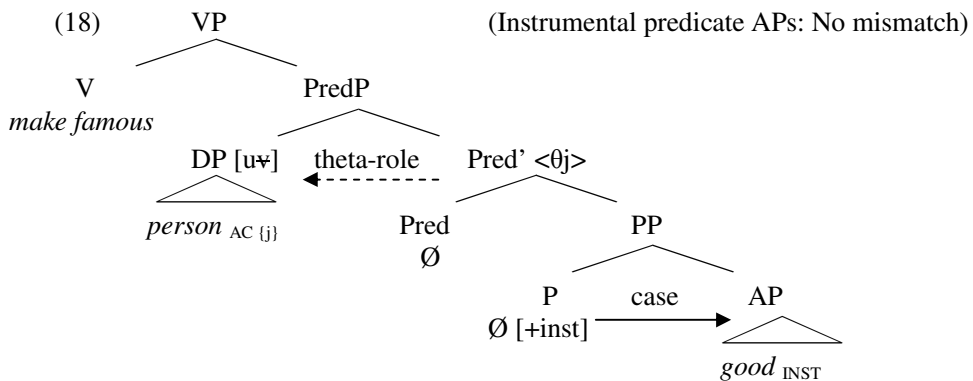
Let us recall example (14b), repeated below as (17). As in the case of NP predicates like (5), here, an instrumental modifier PP headed by a null P was inserted in a designative context, but this time affecting an AP:

(Laurentian Chronicle, 80b)

(17) *Ti bo mimoxodjači proslavjaty čelověka (...) ljubo dobrym[ъ] ljubo*
 those part. who-pass-by make-famous person.AC (...) or good.INST or
zlymъ.
 evil.INST

“Because those who travel (...) will make a person known as either good or evil.”

Sentences like (17), whose structure is represented in (18), were produced by the occasional combination of an instrumental modal AP and a predicational PredP:



In such cases, no reanalysis was necessary simply because no mismatch could arise here: adjectives are not referential, so they do not need to be assigned a theta-role from neither P nor Pred, as represented in (18). Therefore, the formal (case) features valued on the AP predicate did not contradict the semantic interpretation of the construction. This kind of structure could be easily acquired without being reanalyzed, because of the lack of a conflict between the formal features and the semantic relations.

But despite of the lack of a mismatch in the corresponding PLD, after the 17th century, APs marked with instrumental case became increasingly more frequent in predicative contexts. How can we account, then, for the spreading of the instrumental case to AP predicates at this particular stage?

The different nature of N predicates and A predicates suggest that the extension of instrumental case to the last ones in Russian cannot be explained in the same terms as we did before with respect to NPs. Recall the main differences between NP vs. AP predicates in Russian:

- (i) Nouns and adjectives are very different categories: Ns are provided with a referential index, while As lack a referential index; as a consequence, N predicates establish a semantic relation with the Pred head –receive a theta-role–, while A predicates do not (Baker 2003);
- (ii) As a result of this, there was no conflict in the PLD involving designative sentences with instrumental AP predicates, whereas the conflict was present in the case of NPs –compare (18) and (9) above–;
- (iii) The application of the instrumental case to NP and AP predicates did not happen at the same extent: instrumental case on NP predicates is compulsory in certain contexts and banned in others due to structural reasons (cf. fn. 12), while there is no structural requirement for the surfacing

of the instrumental case on APs (cf. fn. 16). Instrumental APs are preferred by learners depending on certain semantic conditions (Filip 2001, Richardson 2003), or even pure stylistic motivations (Nichols 1981).

I have claimed that the factor that contributed to the extension of the instrumental case to AP predicates was the ‘functional / parsing advantage’ of the instrumental in structures like (18). In situations like these, the most “advantageous” grammar –in terms of functionality– is the one that will be acquired by learners in an easier way.¹⁹ As said before, here, a grammatical variant X will be taken to be more functional than a variant Y iff there are syntactic environments in the language that can be disambiguated by X, but not by Y (cf. fn. 8), i.e. if the variant X can undo s(yntactic)-homophonies (cf. fn. 9), or specialize a new meaning.

I will show that there is a functional advantage to the use of the instrumental variant on APs in Middle Russian, starting from the 16-17th centuries, the time when APs began to surface with instrumental predicate case; namely, instrumental case spread in

¹⁹ Together with this kind of functional advantage, we can also consider ‘parsability’ itself as an intervening factor in feeding new structures. Parsability plays an important role in the diffusion of a change, and not only in its initial triggering stage: according to Gibson (1998), Hawkins (1994) and Kirby (1999), the more parsable variant will be used more frequently and, consequently, will spread more quickly. This observation, however, can be only related to the level of linguistic performance and E-language. In Haspelmath’s words:

...I claim that diachronic change is the necessary link between patterns of language use and grammatical structures. Speakers do not intend to create well-designed grammars, but they behave purposefully and rationally in selecting from available variants and in creating new variants – they mostly opt for the most useful variants for their particular purposes. Through an invisible-hand process in language change, the cumulative effect of many individuals’ behaviour leads to useful language structures. (Haspelmath 2008:18)

these contexts as a way to disambiguate possible s(yntactic)-homophones. Let us now see the conditions for this functional / parsing advantage in Middle Russian.

In Old Russian, AP predicates did not give rise to any s-homophony, because they clearly differentiated their predicate functions in a morphological way at that time: long adjectives were used only as attributives, while short adjectives were mainly predicational.²⁰ In fact, predicate APs had to display always the short form. Consider the examples in (19):

(*Laurentian Chronicle*, 11b: long attributive AP)

- (19) a. *Velikii knjazь naš Igorь (...) poslaša ny kь Romanu.*
 great.NOM.LONG.A [prince our Igor].NOM sent us to Roman
 “Our Great Prince Igor sent us to Roman.”

(*Laurentian Chronicle*, 36b: short predicate AP)

- b. *I bys[tь] ljuba rěč[ь] knjazju i vsěmь ljudemь.*
 and was pleasing.NOM.SH.A speech.NOM prince.DT and all.DT people.DT
 “The Prince and all the people found his words very pleasing.”

In the 15-16th centuries, however, an innovation arose in the use of long adjectives: long adjectives started to be used as non-verbal predicates, together with the short forms (Švedova 1948, Lopatina 1968).

When the long adjectives became predicates, a new ‘s-homophony’ arose: long As could be interpreted in some contexts as having either an attributive or a predicational

²⁰ According to Kurz (1946), Georgieva (1952), Borkovskij (1978), and Baranov (2003), long adjectives were created in pre-historical times as exclusively attributive forms, contrasting with short adjectives, which could be either attributive or predicational. But until the 14th century, only a 30% of the attributive adjectives were short forms; long adjectives were the remaining 70%. From this time, the percentage of short attributive adjectives continues decreasing each century, until only long forms are found in attributive uses (Borkovskij 1978, Sannikov 1968).

value. This kind of s-homophony could be disambiguated with the help of the instrumental predicate marker on APs, which was the typical marker for predicates.

Consider the examples in (20): (20a) is a real example from the 13th century, where the AP predicate, as expected, had the short form. In (20b), I have recreated the form that would correspond to example (20a) in the 16th-century; here, the original adjectival short form has been replaced by a long one. Because long adjectives had become generalized in predicational contexts, the long adjective used in (20b) gives rise to a s-homophony; for learners, there could be two alternative structures underlying the phonological string in (20b): a predicational structure (Interpretation 1), and an attributive one (Interpretation 2):²¹

- (20) a. ...zane knjazь ešče malъ bjaše. (1st Novgorod Chr,140b)
 because prince.NOM still small.NOM.SH.A was
 “Because the prince was still young.”
- b. Knjazь ešče malyi bjaše. (Recreated variation - 16th-century)
 prince.NOM still small.NOM.LONG.A was
 Interpretation 1: “The prince was still young.”
 Interpretation 2: “There was / existed also a young prince.”
- c. Knjazь ešče malymъ bjaše. (Recreated variation - 17th-century)
 prince.NOM still small.INST.LONG.A was
 “The prince was still young.”

The s-homophony present in (20b) was solved in Middle Russian by reproducing in the AP realm the model applied to NP predicates some centuries before; that is, by resorting

²¹ A related innovation that conditioned the existence of s-homophonies in contexts involving AP predication is illustrated in (20) above: the ambiguous word string produced by the displacement of an adjective (20a-b) made possible to interpret the adjectival form as part of the subject of an existential sentence or to understand it as a predicate (Borkovskij 1978).

to instrumental encoding of the non-verbal predicate, as illustrated in (20c). In (20c), the only interpretation the AP predicate can have is a predicative one, thanks to the instrumental case marking.

This extension was favoured by the fact that instrumental NP predicates were often followed by an attributive adjective, usually in its long form, agreeing in case with the noun. Such agreeing elements formed a complex NP, marked with instrumental case, as in the following example from Borkovskij (1978):

- (21) *I imete emu mene otcomъ, a syna moego, knjazja Vasil'ja,*
and have his.DT me.AC father.INST and son.AC my.AC prince.AC Basil.AC
bratomъ starejšimъ. (Will # 10, in Borkovskij 1978: 128)
brother.INST older.INST

“Regard me as his father and my son, Prince Basil, as his elder brother.”

Long adjectives encoded with instrumental case in predicative contexts, then, were not unusual in the PLD learners of Middle Russian received.

A last condition for the functional extension of the instrumental case to AP predicates has to do with the semantics / pragmatics of case marking. From the 15th century, the instrumental case began to specialize semantically and encode a transitory property denoted by the adjective (Lopatina 1968), as opposed to second case, which was preserved as the marker of permanent properties. Semantic specialization of the adjectives denoting permanent vs. transitory properties in AP predication became possible due to the existence of the two variants: the old pattern of second case marking and the new instrumental pattern, respectively.²²

²² Ovsjaniko-Kulikovskij (1912) stated that the semantic specialization of Russian AP predicate structures (instrumental vs. second case) took place, as expected, after the reanalysis, or it could have happened in parallel with the spreading of the instrumental forms to APs. This is confirmed by Istrina (1923), who

5- Conclusion

In this paper, I have discussed the possibility that syntactic change in natural languages is not a uniform phenomenon; namely, I have proposed that at least two different kinds of processes can be involved in syntactic change: (i) changes derived from a formal mismatch between the syntactic features a learner has acquired and certain interface data (semantic or phonological information) he/she detects in the PLD, and (ii) changes derived from the functional / parsing advantage of a variant with respect to another variant. I have analyzed the different motivations and results produced by these two types of changes with the help of a case study in Old-Middle Russian: the extension of the instrumental case marker in non-verbal predication.

First, I have illustrated a formal process of change; more specifically, I have argued that the extension of the instrumental case encoder to NP predicates in Old Russian was due to a mismatch detected by learners between the formal case features of NP predicational structures and their semantic (thematic) interpretation. Learners solved this mismatch by reanalyzing the crucial sequence, as a consequence of which instrumental case was adopted as the encoder of NP predicates. Then, I have compared this process to the extension of the instrumental case encoder to AP predicates in Middle Russian, and shown the differences between the two processes. In this sense, I have argued that the extension of instrumental case to AP predicates could not be due to a mismatch like the one produced in the case of NP predicational structures, but had to be triggered by the functional advantage that the instrumental AP variant had with respect to the non-instrumental old variant of second case marking.

pointed out that, initially, second case and instrumentals alternated as non-verbal-predicate encoders with no semantic differentiation, and they specialized semantically later on.

6- References

- Andersen, Henning. 1973. "Abductive and deductive change". *Language* 49.765-93.
- Andersen, Henning, ed. 2001. *Actualization: Linguistic change in progress*. Amsterdam: John Benjamins.
- Anttila, Raimo. 1989. *Historical and Comparative Linguistics*. Amsterdam: John Benjamins.
- Babyonyshev, Maria, Jennifer Ganger, David Pesetsky & Kenneth Wexler. 2001. "The maturation of grammatical principles: Evidence from Russian unaccusatives". *Linguistic Inquiry* 32.1-44.
- Bailyn, John F. 2001. "The Syntax of Slavic Predicate Case". *ZAS Occasional Papers in Linguistics* 22 ed. by Gerhard Jäger, Anatoli Strigin, Chris Wilder & Niina Zhang, 1-26. Berlin: Zentrum für allgemeine Sprachwissenschaft.
- Bailyn, John F. 2002. "Overt Predicators". *Journal of Slavic Linguistics* 10.23-52.
- Baker, Carl L. 1991. "The syntax of English *not*: The limits of core grammar". *Linguistic Inquiry* 22:3.387-429.
- Baker, Mark. 2003. *Lexical Categories. Verbs, Nouns, and Adjectives*. Cambridge, UK: Cambridge University Press.
- Baranov, V. A. 2003. *Formirovanie opredelitel'nyx kategorij v istorii russkogo jazyka*. Kazan': Kazanskij universitet.
- Borkovskij, V. I. 1978. *Istoričeskaja grammatika russkogo jazyka: sintaksis – prostoe predloženie*. Moskva: Nauka.
- Borkovskij, V. I. 1979. *Istoričeskaja grammatika russkogo jazyka: sintaksis - složnoje predloženie*. Moskva: Nauka.

- Borkovskij, V. I. 1980. *Očerki po istorii dialektologii vostočnoslavjanskix jazykov*. Moskva: Nauka.
- Borkovskij, V. I. 1983, red. *Struktura predloženiya v istorii vostočnoslavjanskix jazykov*. Moskva: Nauka.
- Borkovskij, V. I. & P. S. Kuznecov. 2004 [1963]. *Istoričeskaja grammatika russkogo jazyka*. Moskva: Akademija Nauk SSSR.
- Bowers, John. 1993. "The Syntax of Predication". *Linguistic Inquiry* 24:4.591-656.
- Čagiševa, V. I. 1968. "Vtoroj imenitel'nyj i ego zamena kosvennymi padežami (tvoritel'nym predikativnym i predložnym padežom s predlogom v) v istorii russkogo jazyka". *Učennyje zapiski Leningradskogo Gosudartvennogo pedagogičeskogo instituta im. Gercena* 281.133-189.
- Chomsky, Noam. 1959. "A review of B. F. Skinner's Verbal Behavior". *Language* 35.26-58.
- Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris Publications.
- Chomsky, Noam. 1986. *Knowledge of language: Its nature, origins and use*. New York: Praeger.
- Collins, Chris. 2002. "Eliminating Labels". *Derivation and Explanation in the Minimalist Program* ed. by Samuel Epstein & Daniel Seely, 42-64. Oxford: Blackwell.
- Crain, Stephen, & Rosalind Thornton. 2003. "Acquisition of Syntax". *The Encyclopedia of Cognitive Science* ed. by Lynn Nadel. Macmillan: London.
- Filip, Hana. 2001. "The Semantics of Case in Russian Secondary Predication". *Semantics and Linguistic Theory (SALT 11)* ed. by Rachel Hastings, Brendan Jackson & Zsofia Zvolenszky, 192-211. Ithaca: CLC Publications.

- Fodor, Janet D. 1998. "Unambiguous triggers". *Linguistic Inquiry* 29.1-36.
- Fodor, Jerry A. 1975. *The language of thought*. Cambridge, Mass.: Harvard University Press.
- Georgieva, V. L. 1952. "Sintaksičeskie funkcii prilagatel'nyx v drevnerusskom jazyke" (avtoreferat dissertacii kandidata filologičeskix nauk). Leningrad: Leningradskij Gosudarstvennyj Universitet.
- Georgieva, V. L. 1968. *Istorija sintaksičeskix javlenij russkogo jazyka*. Moskva: Prosveščenie.
- Gibson, Edward. 1998. "Linguistic complexity: locality of syntactic dependencies". *Cognition* 68:1.1-76.
- Gleitman, Lila & Elissa Newport. 1995 [2000]. "The invention of language by children: environmental and biological influences on the acquisition of language". *An Invitation to Cognitive Science, Volume 1: Language* ed. by Lila Gleitman & Mark Liberman, 1-24. Cambridge: MIT Press.
- Glinkina, L. A. 1968. "Vtoryje kosvennyje padeži". *Sravnitel'no-istoričeskij sintaksis vostočnoslavjanskich jazykov. Členy predloženiya* ed. by V. I. Borkovskij. Moskva: Nauka.
- Haspelmath, Martin. 2008. "Creating economical morphosyntactic patterns in language change". *Language universals and language change* ed. by Jeff Good, 185-214. Oxford: Oxford University Press.
- Hawkins, John A. 1994. *A Performance Theory of Order and Constituency*. Cambridge: Cambridge University Press.
- Higginbotham, James. 1985. "On Semantics". *Linguistic Inquiry* 16.547-93.
- Istrina, Je. S. 1923. *Sintaksičeskie javlenija sinodal'nogo spiska pervoj novgorodskoj letopisi*. Sankt-Peterburg: Rossijskaja Akademija Nauk.

- Kayne, Richard. 1984. *Connectedness and Binary Branching*. Dordrecht: Foris.
- Kirby, Simon. 1999. *Function, Selection and Innateness: The emergence of Language Universals*. Oxford: Oxford University Press.
- Krasovitsky, Alexander, Alison Long, Matthew Baerman, Dunstan Brown & Greville G. Corbett. 2008. "Predicate Nouns in Russian". *Russian Linguistics* 32.99-113.
- Kroch, Anthony. 1989. "Reflexes of grammar in patterns of language change". *Language Variation and Change* 1.199-244.
- Kurz, Josef. 1946. "Problém členu v jazyce staroslověnském". *Byzantoslavica* 8.172-288.
- Langacker, Ronald W. 1977. "Syntactic reanalysis". *Mechanisms of Syntactic Change* ed. by Charles N. Li, 57-139. Austin: University of Texas Press.
- Lasnik, Howard & Nicholas Sobin. 2000. "The *Who / Whom* Puzzle: on the Preservation of an Archaic Feature". *Natural Language and Linguistic Theory* 18:2.343-71.
- Lightfoot, David. 1999. *The Development of Language: Acquisition, change and evolution*. Oxford: Blackwell.
- Lightfoot, David. 2002. "Introduction". *Syntactic effects on morphological change* ed. by David Lightfoot, 1-19. Oxford: Oxford University Press.
- Lightfoot, David. 2006. *How new languages emerge*. Cambridge: Cambridge University Press.
- Longobardi, Giuseppe. 2001. "Formal syntax, diachronic minimalism, and etymology: The history of French *chez*". *Linguistic Inquiry* 32:2.275-302.
- Lopatina, L. Je. 1966. "K istorii tvoritel'nogo predikativnogo v slavjanskix jazykax". *Izvestia Akademii Nauk SSSR* 25:6.500-508.

- Lopatina, L. Je. 1968. "Imennoje skazuemoe". *Sravnitel'no-istoričeskij sintaksis vostočnoslavjanskich jazykov. Členy predloženiya* ed. by V. I. Borkovskij. Moskva: Nauka.
- Lopatina, L. Je. 1980. "Vzajmoraspoloženije podležaščego i komponentov imennogo skazujemogo v pamjatnikax vostočnoslavjanskix jazykov". *Očerki po istorii i dialektologii vostočnoslavjanskix jazykov* ed. by V. I. Borkovskij, 47-67. Moskva: Nauka.
- Madariaga, Nerea. 2008. *Grammar Change and the Development of New Case Relations: The interaction between core syntax and the linguistic periphery in Old and Present-Day Russian*. PhD. Dissertation. University of the Basque Country.
- Newmeyer, Frederick J. 1998. *Language Form and Language Function*. Cambridge, MA: MIT Press.
- Nichols, Johanna. 1973. *The Balto-Slavic Predicate Instrumental: A Problem in Diachronic Syntax*. Ph.D. Dissertation. University of Berkeley, California.
- Nichols, Johanna. 1981. *Predicate Nominals: A Partial Surface Syntax of Russian*. Berkeley: University of California Press.
- Ovsjaniko-Kulikovskij, A. N. 1912. *Sintaksis russkogo jazyka*. Sankt-Peterburg.
- Pesetsky, David. 1995. *Zero syntax (cascades and experiencers)*. Cambridge, MA: MIT press.
- Pesetsky, D. & E. Torrego. 2001. "T → C: causes and consequences". *Ken Hale: A Life in Language* ed. by Michael Kenstowicz, 355-426. Cambridge, MA: MIT Press.
- Peškovskij, A. M. 2001 [1938]. *Russkij sintaksis v naučnom osveščeenii*. Moskva: URSS.
- Potebnja, A. A. 1958 [1888]. *Iz zapisej po rusškoj grammatike (I-II)*. Moskva: Gosudartsvennoje učebno-pedagogičeskoje izdatel'stvo.

- Pinker, Steven. 1995 [2000]. "Language Acquisition". *An Invitation to Cognitive Science, Volume 1: Language* ed. by Lila Gleitman & Mark Liberman, 135-182. Cambridge: MIT Press.
- Pintzuk, Susan, George Tsoulas & Anthony Warner. 2000. "Syntactic change: theory and method". *Diachronic Syntax: models and Mechanisms* ed. by Susan Pintzuk, George Tsoulas & Anthony Warner, 1-22. Oxford: Oxford University Press.
- Richardson, Kylie. 2003. "Developing the Case for Meaningful Case: the link between Event Structure and Case in Russian". In *Formal Approaches to Slavic Linguistic 11: The Amherst Meeting 2002* ed. by Wayles Browne, Ji-Yung Kim, Barbara H. Partee & Robert A. Rothstein, 451-468. Ann Arbor: Michigan Slavic Publications.
- Riemsdijk, Henk van. 1978. *A Case Study in Syntactic Markedness*. Dordrecht: Foris.
- Sannikov, V. Z. 1968. "Soglasovannoe opredelenije". *Sravnitel'no-istoričeskij sintaksis vostočnoslavjanskich jazykov. Členy predloženiya* ed. by V. I. Borkovskij. Moskva: Nauka.
- Šaxmatov, A. A. 2001 [1941]. *Sintaksis ruskogo jazyka*. Moskva: URSS.
- Sobin, Nicholas. 1997. "Agreement, Default Rules and Grammatical Viruses". *Linguistic Inquiry* 28.318-343.
- Sprinčak, Ja. A. 1960. *Očerk ruskogo istorečeskogo sintaksisa. Prostoje predloženie*. Kiev: Radjans'kaja škola.
- Švedova, N. Ju. 1948. "Vozniknovenije i rasprostraneniye predikativnogo upotrebleniya člennyx prilagatel'nyx v ruskom literaturnom jazyke XV-XVIII vv". *Doklady i soobščeniya Instituta ruskogo jazyka Akademii nauk SSSR* 1.102-116.
- Švedova, N. Ju. 1952. "Polnye i kratkie formy imen prilagatel'nyx v sostave skazuemogo v sovremennom ruskom literaturnom jazyke". *Učenyje zapiski MGU* 150.73-132.

- Timberlake, Alan. 1977. "Reanalysis and Actualization in Syntactic Change".
Mechanisms of Syntactic Change ed. by Charles Li, 141-177. Austin: University of Texas Press.
- Uriagereka, Juan. 2004. "Reflections on Variation". Ms. University of Maryland - University of the Basque Country.
- Vaillant, André. 2002 [1948]. *Manuel du vieux slave*. Paris. [Russian translation: 2002 *Rukovodstvo po staroslovjanskomu jazyku*. Moskva: URSS].
- Van Gelderen, Elly. 2008. "Where did Late Merge go? Grammaticalization as feature economy". *Studia Linguistica* 62:3.287-300.
- Whitman, John. 2000. "Relabelling". *Diachronic Syntax: models and Mechanisms* ed. by Susan Pintzuk, George Tsoulas & Anthony Warner, 220-238. Oxford: Oxford University Press.
- Xodova, K. I. 1960. "Značenija tvoritel'nogo bespredložnogo v staroslavjanskom jazyke". *Učenyje zapiski instituta slavjanovedenija AN SSSR* 19.101-158
- Yang, Charles D. 2000. "Internal and external forces in language change". *Language Variation and Change* 12.231-250.
- Yang, Charles D. 2002. "Grammar competition and language change". *Syntactic effects on morphological change* ed. by David Lightfoot, 367-380. Oxford: Oxford University Press.
- Zaliznjak, A. A. 2004. *Drevnenovgorodskij dialekt*. Moskva: Jazyki slavjanskoj kul'tury.