

Imke Mendoza\* and Barbara Sonnenhauser

# Oscillation and Oscillating Structures in Syntax

<https://doi.org/10.1515/slwa-2023-0013>

**Summary:** Linguistic expressions are very often indeterminate and have several possible readings. Syntactic indeterminacy may result from different underlying structures, from polysemous elements, or from so-called oscillation. Unlike the former two, oscillation cannot be reduced to one or more discrete interpretations in a given context, it is fundamentally non-resolvable. While oscillating structures do not hamper successful communication, they present a problem for linguistic analyses and categorizations. The relevant literature does not address oscillation systematically; if anything, it is treated in connection with problems of categorization. In this paper, oscillation is perceived as a phenomenon *sui generis*. We first give a definition of oscillation against the backdrop of other indeterminate structures and outline their relevance for a proper understanding of older and less formal varieties. Then we propose a tentative typology of oscillating structures and their potential triggers in selected Slavic languages.

**Keywords:** Clause combining, discourse, indeterminacy, Slavic, Syntax

## 1 Introduction

It is the language users' and the linguists' everyday experience that linguistic expressions are indeterminate and have more than one interpretation. In the case of syntactic structures, this indeterminacy is often the result from the availability of different underlying structural configurations or from the lexical polysemy of one or more elements. In both cases, the different meanings can be clearly identified, i.e., they are discrete. However, in addition to discreteness, we may also encounter “fuzziness” (cf. Ru. “diffuznost”, Apresjan 1995) of meaning, a “nejasnaja, razmytaja promezutočnaja oblast” (Apresjan 1995: 179). In the description and analyses of

---

\*Corresponding author: Prof. Dr. Imke Mendoza, Paris-Lodron-Universität Salzburg, Erzabt-Klotz-Str. 1, A-5020 Salzburg, E-Mail: [imke.mendoza@plus.ac.at](mailto:imke.mendoza@plus.ac.at)

Prof. Dr. Barbara Sonnenhauser, Ludwig-Maximilians-Universität München, Geschwister-Scholl-Platz 1, D-80539 München, E-Mail: [barbara.sonnenhauser@lmu.de](mailto:barbara.sonnenhauser@lmu.de)

both semantic and syntactic structures, however, such diffuse areas tend to be overlooked.

The defining characteristics of diffuse expressions elude the descriptive apparatus of the more traditional, predominantly categorical approaches of linguistic analysis. The well-established analytical tools of syntactic analysis fail in particular when it comes to combined clauses with diffuse interpretations. However, their careful and thorough description is essential for a comprehensive analysis of clause combining, not least because they occur frequently, particularly in older stages of languages and in less formal varieties.

In the present paper we focus on diffuse syntactic constructions, which we call “oscillating structures (OS)”.<sup>1</sup> An illustration for an OS is given in (1). The relation between the clauses is indeterminate, it could be conditional, temporal or a mere juxtaposition:

- (1) a    u    ženy   ditja   roditsja   *ino*    babit'   muž'  
 and   at   women child   is\_born   *ino*    accept   man  
 (Old Ru; Afanasij Nikitin, Troickij izvod: 379)  
 ‘and (when) a woman has a child, and the man accepts it’

We present a first basic framework of how to approach OS by identifying the possible ranges and potential triggers of oscillation. Discussing major types of OS for older and contemporary stages of Russian, Polish, Slovene and Bulgarian as representatives of the main branches of Slavic, we show the necessity of acknowledging this manifestation of diffuseness in linguistic analysis.

The paper is organized as follows: in Section 2 we address some problems that arise when analyzing indeterminate expressions in general. In Section 3 we discuss the relation of oscillation and oscillating structures to other indeterminate expressions and highlight their relevance for syntactic analysis. Section 4 proposes the main parameters of oscillation. In Section 5, we draw preliminary conclusions.

---

<sup>1</sup> We borrowed the term “oscillation” (Ru. *oscilirovanie*) from Apresjan (1974: 9; 1995: 179, 180). Unlike Apresjan, however, we only use it for syntactic phenomena, and reserve the concept of vagueness for the semantic level. Note, however, that vague lexical items can be the origin of oscillation, cf. 4.2.2. – We use the notion of ‘structure’ to refer to a sequence of two or more clauses that are connected formally or semantically. The term remains maximally agnostic and flexible, whereas more traditional terms, such as ‘sentence’, are notoriously difficult, in particular when applied to older texts or spoken varieties.

## 2 The challenge of indeterminacy

When analyzing syntactic phenomena, most works rely on categorial distinctions and thereby imply that syntactic knowledge is organized exactly that way. However, there is evidence to suggest that syntactic knowledge is more plausibly understood as being rather probabilistic than categorial (cf. Bresnan 2007; Manning 2003; Bod 2009). In her study on the dative alternation in English, Bresnan (2007) found that speakers rate different structures similarly to the probabilities predicted by a corpus model. She interprets this to indicate that the speakers' "implicit knowledge of the dative alternation in context reflects the usage probabilities of the construction" (Bresnan 2007: 84). The strength of the probabilities and, concomitantly, the degree of acceptance rely on the interplay of various linguistic factors that serve as predictors with different impact. What is observed as "rule-like behaviour" thus emerges as "a side effect of maximizing probability", i.e., apparent rules are nothing more than preferred structures and as such allow for a "gradient middle ground" (Bod 2009: 633). With an adequately annotated, large enough data set, it is possible to estimate the influence of the different predictors on the choice of one structure among various options. This, in turn, allows for the identification of the choice probabilities.

Following Jakobson (1971[1957]), we assume that probabilities are involved not only in selecting and judging structures, but also in interpreting them.<sup>2</sup> With the advancement of categorial approaches to language, the role of probability in interpretation has faded to the background and indeterminacy has largely been restricted to the realm of – no less categorial – ambiguity resolution. However, the description of ambiguity resolution could profit from a probabilistic approach, since it is fostered by certain factors that can serve as predictors both in the lexical (e.g., combinatorial patterns to distinguish *časy* 'hours' vs. 'watch' in *časy raboty* vs. *časy robotajut*) and the syntactic domain (e.g., factors influencing preferences in high vs. low attachment of relative clauses).

Even if single speakers each take clear-cut decisions between distinct alternatives or among systematically related senses (i.e., homonymous or polysemous forms/structures), the decisions across individuals may vary so that the accumulation of single choices results in a less clear-cut distribution. This abstraction from individual decisions thus reveals preferences that eventually make for the probabilistic scenario. That is, even with ambiguity resolution, individual choices of speak-

---

<sup>2</sup> See Jakobson (1971[1957]: 277): „nach gewissen Einheiten folgen andere Einheiten mit höherer oder geringerer Wahrscheinlichkeit, und manche sind a priori ausgeschlossen. Eine unbewußte statistische Einstellung ist dem Wahrnehmenden eigen, und die Homonymie ist für ihn ein wesentlicher Vorgang“.

ers are at play and need to be considered, i.e., preferences based on the individual weighting of contextual factors, previous experience with the relevant structures etc.

However, indeterminacy cannot in all cases be solved by choosing among clear-cut variants or predictable sense extensions, not even on an individual basis. The seeming lack of clarity that may occur in such situations is not detrimental to successful communication, since communication does not always need fully spelled out senses and meanings. Research on ambiguity has shown that “ambiguity avoidance is widely overrated as a factor in language structure and use” (Wasow 2015: 44). We can expect this to be true even more for expressions that do not allow the delineation of potential interpretations.

While oscillating structures do not present a problem for language users, analysing them for the purpose of linguistic descriptions is a considerable challenge. Their exact meaning cannot be specified and inferred from the context.<sup>3</sup> This, in turn, prevents the application of the kind of multifactorial analyses pursued in the probabilistic approaches sketched above. Such an approach is only possible if we find parameters to work with, e.g., by identifying the range of variation and potentially preferred interpretations. Given the absence of clear-cut choice options and identifiable predictors, this is not an easy task.<sup>4</sup> However, despite these difficulties, the endeavour to systematically identify diffuse syntactic structures that defy a univocal categorization but instead oscillate along a particular functional range is not hopeless: even the interpretation of diffuse structures is not completely random but is subject to systematic restrictions.

## 3 Oscillating structures

### 3.1 Syntactic ambiguity vs. oscillation

An ambiguous structure has two or more potential readings due to different syntactic structures that happen to have the same surface realization. All it takes to remove uncertainties over the interpretations is to identify those two (or more) struc-

---

<sup>3</sup> See Denison (2017: 293) on the distinction between ambiguity and – as he puts it – vagueness: “What differentiates ambiguity from vagueness is whether or not SP/W [speaker/writer] could have made a choice, and furthermore, whether such a choice would have mattered.” Our usage of the term oscillation corresponds to Denison’s vagueness, is, however, restricted to syntactic phenomena (cf. fn. 1). For a discussion of ambiguity and its connection to other semantic relations see also Gillon (2004).

<sup>4</sup> The neglect of oscillation in linguistic analysis may relate not only to the “discreteness bias” outlined above, but also to the methodological difficulties.

tures. A well-known example for ambiguity resolution is given in (2). The interpretation of the surface string depends on the syntactic placement of the dative *mužu*: interpretation (i) holds if it is analysed as the dative object of the verb *izmenjat'*, and (ii) applies if it is dependent on the predicative expression *nel'zja*.

- (2) Mužu                      izmenjat'    nel'zja.  
 husband.DAT.SG.M    betray.INF    not\_allowed  
 (Ru; Apresjan 1974: 5; 1995: 176)  
 (i) it is not allowed to betray one's husband  
 (ii) a/the husband is not allowed to betray

For poly-predicative expressions such as (3) and (4), no such distinct alternatives suggest themselves. Unlike (2), there is no coinciding of two structures that happen to have the same surface realization, that is the different readings do not originate in two (or more) different underlying constructions. These structures do not enable a strict choice of complementary interpretations. They have no “wrong” reading, but instead open up a whole range of possible, equally valid interpretations.<sup>5</sup>

- (3) (a kto u nixъ umretъ i oni těxъ žgut da pepel sypljutъ na vodu)  
 a    u    žený                      ditja                      roditjsja                      ino  
 and at woman.GEN.SG.F child.NOM.SG.N is\_born.3SG.PRS ino  
 babit'                      muž'  
 accept.3SG.PRS man.NOM.SG.M  
 (Old Ru; Afanasij Nikitin, Troickij izvod: 379)  
 '(and someone from them dies and they burn them and they dump the ashes in the water)  
 and a woman has a child, and the man accepts it'

- (4) *kdor*    ima                      dve    ženski                      naj    odstopi  
 who.REL have.3SG.PRS two women.ACC.F.SG shall give.3SG.PRS  
 eno                      tistemu                      ki    ima                      le    eno  
 one.ACC.F.SG that\_one.M.SG.DAT who hav.3SG.PRS only one.ACC.F.SG  
 (Slv; Gigafida: *Dnevnik* 2008)  
 'He who has two women should give one to that one, who has only one.'

In (3), the nature of the linkage between the two predications is vague. The element *ino* simply indicates a connection without specifying its exact nature; the manner of the interrelation between the two states of affairs is left syntactically indeterminate. In (4), the referential specification of the first clause is not clear. The *wh*-element *kdor* expresses non-specificity, what may lead to several potential readings, includ-

<sup>5</sup> The translations are meant to provide access to the examples and should not be taken to suggest one definite, clear-cut interpretation. Wherever possible we tried to keep the oscillation by replicating the wording of the examples.

ing a generalizing or a conditional interpretation. This, in turn, has a bearing on the interpretation of the syntactic relation between the *kdor*-structure and the following clause. As a result, (4) is semantically and syntactically indeterminate and there is no resolution to this state of indetermination. Neither factoring in the context nor providing more information could help to narrow the possible readings down to one clear-cut interpretation.

The notion of oscillation highlights the gradient distribution of interpretational possibilities across the overall range of interpretations. Empirically, the difference between oscillation and ambiguity should manifest itself in continuously distributed preferences for OS whereas ambiguous and polysemous structures would show a highly categorial distribution.

From the perspective of linguistic description, the possible interpretations of a given OS often seem to be located between two structures that are two ends of a scale, e.g., subordination and coordination, or relativization and complementation, such that these structures run danger of being regarded as being ambiguous. When analyzing OS, one should be aware of the fact that such scales and oppositions do not necessarily reflect the reality of language users but are, above all, descriptive and theoretical constructs.

### 3.2 The relevance of oscillation

Clausal structures with oscillating characteristics appear in many studies on compound structures, but their oscillating nature is oftentimes not explicitly acknowledged. We find references to OS – or rather: to specific interpretations of OS – in works on the categorization of complex sentences, including the ordering and positioning of structures along scales and continua (e.g., Gast & Diessel 2012; Cristofaro 2014; Aarts 2007), and the investigation of shared features of apparently different syntactic structures (e.g., Topolinjska 1997; Arsenijević 2009a; Krapova 2010; Gast & Schäfer 2012). They also occur in historically oriented studies, such as research on the cyclic development of clausal connectors and the accompanying diachronic changes of syntactic structures (see, for example, Grosu & Landman 1998; van Gelderen 2009; 2015). The discussions in these works focus on certain interpretations that are, for various reasons, salient among the range of possible readings. However, the phenomenon of OS has never been studied as a phenomenon *sui generis*.

The relevance for studying OS is particularly obvious when it comes to the analysis of older stages of languages and the study of less formalized, spoken forms of communication. When we compare older and newer stages of a language or different diastatic and diaphasic varieties we often find expressions that correspond to OS but are more explicit in the newer or more formalized varieties. These corre-

spondences<sup>6</sup> specify one particular interpretation out of the range of oscillation, e.g., *kogda* or *esli ... to* for constructions like (1)/(3). It is tempting to project the diachronic or diastratic/diaphasic correspondences directly onto an OS, thus suggesting clear-cut alternatives as choice options for speakers. This, however, misses the crucial point. For speakers, the possible interpretations might not constitute a set of discrete options at all, but rather an amorphous field of connectivity which could provide the basis for more specific interpretations. One has thus to be careful not to apply theoretical *ex post* categorizations as ontologically given grids onto the structures under investigation (as already pointed out by the Prague School's "principle of center and periphery", Daneš 1982). Superimposing a structural ambiguity when there is none bears the danger of applying theoretical assumptions and preconceived categorizations onto structures that actually allow for a much broader range of interpretations than a simple choice between two or more alternatives. To emphasise it again: What might look like a binary option for a theoretically informed linguist, might not be relevant at all in actual language usage.

Taking oscillation at face value means a shift in perspective from an outsider position to that of languages users in a particular communicative situation, who often may not even be aware of the indeterminacy. This shift in perspective is the only way to approach the interpretative potential such structures may provide for interlocutors.

The issue becomes even clearer when we relate our approach to the notion of 'reanalysis', one of the pivotal concepts in describing language change, in particular at the level of syntax. It relies on the idea that a speech community gradually interprets a given surface structure in a way that differs from the previous interpretation. As pointed out by Anderson (2001: 233), this re-interpretation "presupposes that surface realizations can be structurally ambiguous, so that speakers can construe them differently, assigning them different content or different underlying relations or representations".

From our perspective, oscillation can be regarded as a preliminary stage of a situation that allows reanalysis, i.e., the condensation of preferences across speakers at two or more locations within the range of variation, which then suggests choice options that come close to what we observe for structural ambiguity. Oscillation not only precedes but also enables reanalysis after various possible interpretations have emerged. Therefore, understanding OS might give us valuable insights into the potential dynamics of change as effected by the speakers as communicative

---

<sup>6</sup> We use Andersen's term "correspondence" to designate relations "between homologous elements [...] belonging to two chronologically separate synchronic states in a linguistic tradition" (Andersen 2001: 228) and extend the concept to diaphasic and diastratic relations.

agents. By pinning down the triggers and assessing the ranges of oscillation from a bottom-up perspective, we aim at contributing to a deeper understanding of the principles of clause combining on the levels of syntax and discourse.

### 3.3 Approaching oscillating structures

Our approach is data-driven and bottom-up, abstracting away from *a posteriori* linguistic categorizations, with as little theoretical assumptions as possible. Unlike the parameter-based approaches as summarized in Gast & Diessel (2012), we do not deconstruct traditional categories resulting from syntactic description. We rather employ them for descriptive purposes, while trying to avoid them as a means of analysis. In addition, the concept of gradience or prototypicality is not relevant to us as a descriptive category. Even though OS – or rather their interpretations – are frequently located on a continuum between two constructions or features, oscillation per se is not a matter of degree; it rather provides the basis for a range of possibilities. Gradience in our sense refers to the distribution of individual preferences of specific interpretations for a particular structure. Therefore, we are not so much interested in the exact location of a given structure between two more explicit constructions and its relation to these constructions as we are in the oscillating structure itself.

The overall aim of a strictly empirical investigation of OS requires a sufficiently large set of data for different historical stages and different synchronic varieties of a given language. In this paper, we will provide the analytical grid for approaching OS by suggesting a first tentative systematization in terms of the range and the triggers of oscillation.

Identifying the range of readings for a particular structure in a particular spatiotemporal setting is possible via their explicit verbalization in diachronic and diaphasic/diastratic correspondences. A correspondence instantiates one possibility out of the overall range of possible diachronically or diastratically/diaphasically distant structures (see Section 3.2). If the particular instantiations appear to be quite regular, it seems justified to regard them as indicating preferred interpretational options, i.e., as interpretations having gained a high degree of supra-individual probability over time.

The identification of triggers provides insight into the sources of oscillation on the synchronic plane. By ‘triggers’ we understand those elements of a structure that cause or foster its indeterminacy. The next step in our approach would be analysing the relation between the range and the trigger. Are they independent features or do certain triggers prefer certain types of range and vice-verse? However, this can only be done after the empirical verification of range and triggers relying on a larger data set.



Although this basic grid should eventually be applicable to any language, we will start out with the Slavic languages, because we want to keep the inventory of possible parameters and their morpho-syntactic realization comparable and manageable. Since OS are not restricted to a particular stage of a language, we include data from older and modern varieties alike. When looking at the more explicit constructions in terms of diachronic and diastratic/diaphasic correspondences, we attempt to avoid teleological reasoning. We also refrain from associating non-standard modern examples with more standard-like and more explicit constructions. Accordingly, we will provide only very tentative translations for the OS to be discussed in Section 4 (see also fn. 5).

## 4 Parameters of OS

Due to the lack of clear formal indicators, OS are hard to identify and even harder to search for in corpora or via search engines. Therefore, we will argue our points on the basis of selected examples. The discussion will provide a starting point for establishing the tools for a systematic search, which, in turn, will enable quantitative studies.

Firstly, we try to determine the possible range of oscillation by identifying the explicit correspondences in more recent or more standard-like varieties and map them with possible interpretations (Section 4.1). Secondly, we discuss which elements in a structure trigger or foster oscillation (Section 4.2). The latter is necessary to enable a corpus-based search for the oscillating structures.

### 4.1 Range of oscillation

The range of oscillation can be defined by the more explicit options that emerge as (temporary) resolutions in diachronically or diastratically/diaphasically distant varieties. Disclosing such stabilized preferences is possible via the identification of correspondences, which we take to be indices for preferred interpretations. These correspondences then may be used as auxiliary tools to estimate the ranges of possibilities covered by the oscillating structures and help to delimit the range of oscillation by providing its ‘extremes’.

We show various dimensions of oscillation by providing pairs of (unambiguous) constructions that define the range of an OS on both the syntactic and semantic levels of clause combining. The list is not exhaustive and the analysis of other languages and language groups will surely disclose more ranges. The terms we use for the designation for the poles of oscillation are meant to be convenient labels but do not imply any further categorial claims.

### 4.1.1 Syntactic level

Oscillation on the syntactic level covers the range between paratactic and hypotactic connections. Examples (5)–(7) show clausal nominal modification by the second clause. At the same time, both clauses display a certain degree of syntactic independence. They are not linked by a syntactic relation proper, but by an anaphoric relation between a noun phrase in the second clause and an element in the preceding clause. The examples display different relations between antecedent and anaphoric element. In (5), they are lexically identical (*kraj* ‘land’), in (6), the anaphoric expression is a hypernym to its antecedent (*koncystor* ‘consistory’ – *akcja* ‘action’) and the anaphoric *beseđ* ‘words’ (SG.NOM *beseđa* ‘word’) in (7) refers to a segment of direct speech quoted in the preceding text. In (5) and (6), the second clauses might very well stand on their own, since their argument structure is complete; the only indication of clausal connection comes from orthography, i.e., the scribes’ decision to use a comma. In (7), orthography suggests that the scribe perceived the second clause as autonomous.

- (5) in [bo] jih pahnil v' kraj vezhne  
 and be.3SG.FUT them throw.I-PTCP into place.ACC.SG.N eternal.GEN.SG.F  
*fhtrafenge kteri kraj pekel imenujemo*  
 punishment.GEN.SG.F which place.ACC.SG.N hell.ACC.SG.M call.3SG.PRS  
 (Slv; IMP: *Štiri poslednje reči*, Cigler, Janez, 1831)  
 ‘and he will throw them into a *place* of eternal punishment, *which place* we call hell’

- (6) Nazajutrz miał ociec święty  
 the\_next\_day have\_3SG.PST Father.NOM.SG.M holy.NOM.SG.M  
*koncystor, przy którym akcie kardynałowie [...]*  
 consistory.ACC.SG.M by REL.LOC.SG.M act.LOC.SG.M cardinal.NOM.PL.VIR<sup>7</sup>  
 (Po; *Merkuriusz Polski*, 1661)  
 ‘The next day, the Holy Father held a *consistory*, during *which act* the cardinals ...’

- (7) Pořluřheimo, kai nam S. Joannes cap. I. pokashe inu povei:  
 let.us.listen what 1PL.DAT s. John, chapt. I show.3SG.PRS and say.3SG.PRS  
*Ecce Agnus Dei, [...]. S' katirih befed vidimo, de*  
 Ecce Agnus Dei from which.GEN.PL word.GEN.PL see.1PL.PRS COMP  
 (Slv; IMP: *Kristusovemu trpljenju posvećen post*, Gabriel Hevenesi, Gašpar Rupnik; 1773)  
 ‘Let us listen, what S. John, chapt. I shows and says: Ecce Agnus Dei [...]. *From which words* we see that [...]’

The examples (8) and (9) illustrate another way of how oscillation comes about. Whereas (5)–(7) show an excess of cohesive elements, (8) and (9) lack such devices.

<sup>7</sup> VIR = virile subgender.

The expressions *on vse polučaet pis'ma* ‘he still receives letters’ and *teper' umer* ‘just died’ obviously serve the modification of *devčonka* ‘girl’ and *moj batjuška* ‘my father’ respectively, but do not contain any explicit element that indicates their syntactic role. The referents are parts of the argument structure of the verbs in the modifying clause but have no overt realization (*polučat' [ot nee], umer [batjuška]*).

- (8) Ty znaeš devčonku on vse polučaet pis'ma?  
 you know.2SG.PRS girl.ACC.SG.F he all receive.3SG.PRS letters.ACC.PL  
 (Ru coll.; Weiss 2019)  
 ‘Do you know the girl he’s always getting letters from?’

- (9) Moj teper' umer batjuška ot kogo-to, ne vedaju,  
 my now die.PST.SG.M father.NOM.SG.M from somebody.GEN.SG NEG know.1SG.PRS  
 čto ležat klady v Černoj Gore.  
 COMP lay.3PL.PRS treasure.NOM.PL in black.LOC.SG.F mountain.LOC.SG.F  
 (Ru about 1900; Tenišev 1, p. 517, Weiss 2019)  
 ‘My [who] is dead now father learned from somebody that there is a treasure in the Black Mountain’

When we look at structures like (8) and (9) from the perspective of modern Standard Russian, we are tempted to interpret them as relative clauses that lack any overt marking of syntactic relations (see the concept of “zero linking” in Weiss 2019). But again, this is an interpretational frame imposed from a theoretical ex post view and, in our opinion, does not do justice to the oscillational quality of these examples.

Example (10) illustrates yet another case of oscillation between hypotaxis and parataxis. The element *naj* may assume various functions ranging from modal particle to clausal complementizer (Sonnenhauser 2021). In the former case, the linkage in (10) would be asyndetic, in the latter, it would be hypotactic. The structure thus oscillates between a sequence of independent clauses and a more hierarchical relation between them.

- (10) starega vina primešamo [...], naj  
 old.GEN.SG.N wine.GEN.SG.N add.1PL.PRS such that~let them  
 bodo možilost dobile  
 3PL.FUT virility.ACC.SG.F gain.1-PTCP.PL.F  
 (Slv; IMP: *Čebelarstvo*, 1831)  
 ‘we add some old wine, *such that* they gain virility ~ *let them* gain virility.’

#### 4.1.2 Semantic level

Oscillation may also pertain to the semantic relations between the clauses of an OS. This type of oscillation has its origin in the overall structure or the semantic vague-

ness of the potentially connecting element, which then allows different syntactic interpretations.

#### 4.1.2.1. Adverbial clause ~ complement clause

The structures in (11) and (12) oscillate between adverbial and complement construction. Incidentally, these examples illustrate our concept of OS very clearly: No matter how one looks at them, there is no clearly preferred interpretation, i.e., no resolution to the indeterminacy:

- (11) No azъ govorju vam, otsega xoćete  
 but I tell.1SG.PRS 2PL.DAT from\_now want.2PL.PRS  
*da* vidite mene *kako* ke sedna  
 COMP see.2PL.PRS me how~COMP will sit  
 (Bg; *Nedelnik* 47r)  
 ‘But I tell you, from now on you will see me, *how* ~ *that* I will sit’

- (12) O crju! Nevidišli *kako* prelestenъ esi  
 oh Tsar.M.SG.VOC NEG.see.2SG.PRS.Q how~COMP graceful.M.SG be.2SG.PRS  
 (Bg; *Nedelnik* 202)  
 ‘Oh Tsar! Don’t you see *how* graceful you are ~ *that* you are graceful’

From today’s perspective, such structures may be analysed as exemplifying the characteristic change of the interrogative ‘how’ to a complementizer (e.g., van Gelderen 2015). However, this perspective runs danger of imposing a specific diachronic correspondence – adverbial or complement clause – in a categorial way onto older data. It suggests that at a particular point in time, speakers might have perceived such structures as clearly ambiguous. Our approach involves weaker suppositions about the diachronic speaker, we just assume that these structures were perceived as underdetermined.

#### 4.1.2.2 Relative clause ~ complement clause

It is well known that in many languages complementizers and relative words are homophonous and diachronically related (see Topolinjska 1997: 1998; van der Auwera & Kućanda 1985; Krapova 2010; Guz, this volume; Murelli 2011: 123–129 and passim; Rudin 2013: 138–144; Meyer 2017, to just name a few). The classification of En. *that*, Rus. *ćto* etc. as relative particles, conjunctions or complementizers might seem to be a merely terminological issue. However, this often leads to an attempt to explain one construction in terms of the other. A fact that adds to the confusion is the existence of constructions that oscillate between a relative construction and a clausal complement construction. In (13), the clause introduced by *ći* is indifferent

concerning its attachment site. Thereby, from a contemporary perspective, it might equally qualify as relative clause to ‘Christ’ or complement clause to ‘say’.

- (13) (Pisanieto mnogo pōti ima obyčaj da kazva taka:)  
 kakto kazva za Xrist či rekaľ  
 as say.3SG.PRS about Christ COMP~REL say.I-PTCP  
 (kakъ e съ насъ [...])  
 (Bg; PE 1868)  
 ‘(the Scripture oftentimes has the habit to say as follows:)  
 as [he] says about Christ, *who* said ~ *that* he said (how/that he is with us)’

Oscillation between relative clause and complement is also typical for the so-called “presentational relative clauses” (Guz, this volume), see (14). Presentational relative clauses introduce a new referent, following the pattern “there is an X that...”. The second clause, which provides the characterisation of the referent, is often introduced in a way that is not typical for relative clauses in a given language.<sup>8</sup> For spoken Polish, this is true for *że*, whose function is restricted to clausal complementation in modern Standard Polish (Guz, this volume).

- (14) to jest ten typ że  
 this.NOM.SG.N be.3SG.PRS this.NOM.SG.M type.NOM.SG.M COMP~REL  
 on prowokuje i on na przykład  
 he.NOM.SG.M provoke.3SG.PRS and he.NOM.SG.M on example.ACC.SG.M  
 bawi się twoją obecnością  
 play.3SG.PRS REFL YOUR.INS.SG.F presence.INS.SG.F  
 (Po; SPOKES, from Guz, this volume)  
 ‘this is the type (of person) *that* provokes and, for example, plays with you when you are present’ (Po., Spokes; Guz this volume)

#### 4.1.2.3 Relative clause ~ adverbial clause

The oscillation between adverbial and relative clause is similar to that between complement and relative clause. The difference consists in the additional semantic specification the second clause may contribute. In (15), *deto* may be interpreted as introducing a relative clause modifying the head noun *krevéte* ‘the bed’, but at the same time it might be interpreted adverbially, providing a spatial modification of the whole event described in the preceding clause.<sup>9</sup>

<sup>8</sup> It remains to be investigated whether this specific type of oscillation is restricted to languages that have a complementizer distinct from relative pronouns (see also Ge. *er ist so ein Typ, dass er einen provoziert und sich über deine Anwesenheit amüsiert*).

<sup>9</sup> Gast & Schäfer (2012) call this type of clause “hybrid adjunct clauses”.

- (15) ta stóriha                    megdán                    ta púsnaha                    krevéte                    *deto*  
 and make.3PL.PST    open\_space                    and lower.3PL.PST    bed.DEF                    where~REL  
 léžeše                    bólné  
 lay.3SG.PST                    sick\_man  
 (Mac dial.; Mark 2:4, Tärils ms 1861; Topolinjska 1997: 385)  
 ‘and they made an open space and lowered the bed *where* ~ *that* the sick man lay’

As with the ‘how’~‘that’-cases in (11)–(12) above, it is tempting to project the contemporary function of *deto* as relative particle back onto this oscillating structure<sup>10</sup> and interpret it as a starting point of a cyclic change. Again, this bears the danger of teleological reasoning.

#### 4.1.2.4 Free relative clause ~ conditional structure

Free relative clauses, i.e., relative clauses occupying an argument position, and conditional semantics are closely related in many languages (see Haspelmath & König 1998: 577–578 and *passim* for a semantic-typological perspective and Arsenijević 2009a for a syntactic analysis based on Serbo-Croatian data). The following examples represent different instances of this type of oscillation. In (15)–(16), the fronted clause is introduced by an adnominally (15) or pronominally (16) used pronoun and describes a potential state of affairs. The second clause (apodosis) refers to a situation that holds when the state of affairs described in the first clause is realized. Both examples introduce their second clause with the connective *i*.

- (16) a                    *u kotorye*                    ženy                    *ot*                    gostja  
 and    at    REL~INDEF.GEN.SG.F                    woman.GEN.SG.F                    from    merchant.GEN.SG.M  
 začnestsja                    ditja                    i                    muž  
 is\_conceived.3SG.PRS    child.NOM.SG.N                    and                    man.NOM.SG.M  
 daetʃ                    alafu  
 give3SG.PRS                    support.ACC.SG.F  
 (Old Ru; Afanasij Nikitin; Troickij izvod: 382)  
 ‘and (if) *some* woman conceives a child from a merchant, and the husband gives [him] financial support’
- (17) *u kogo*                    čto                    est'                    na                    rusi .  
 at    REL~INDEF.GEN.SG    INDEF.ACC.SG    be.3SG.PRS    on                    Russia.LOC.SG.F  
 i                    *tot*                    pošelʃ                    na                    rusʃ  
 and    DEM.NOM.SG.M                    go.pst.sg.m                    on                    Russia.ACC.SG.F  
 (Old Ru; Afanasij Nikitin, Troickij izvod: 371)  
 ‘*someone* ~ *whoever* has something in Russia, and *that one* went to Russia’

<sup>10</sup> Note that the contemporary translations have the relative clause structure *odarov, na koj ležeše* ‘the couch on which he lay’ (Topolinjska 1997: 385).

A similar situation is illustrated by (18a), where the fronted clause may be interpreted as subject argument or as a condition for the second clause, as indicated by the correspondence in (18b).

- (18) a. *Kdor* drugemu jamo koplje sam  
 who.REL other.DAT.SG.M cave.ACC.SG.F dig.3SG.PRS self.NOM.SG.M  
 vanjo pade.  
 into\_it fall.3SG.PRS  
 (Slv; Breznik 1916: 212)  
 ‘Harm set, harm get.’ [lit.: Who digs a hole for some other will himself fall into it.]
- b. *Če* jaz kopljem (ti koplješ), bom jaz (boš ti)  
 if I dig.1SG.PRS you dig.2SG.PRS be.1SG.FUT I be.2SG.FUT you  
 vanjo padel  
 into\_it fall.I-PTCP  
 (Slv; Breznik 1916: 212)  
 ‘If I set (you set) harm, I will (you will) get harm.’

The kind of oscillation illustrated for (18a) seems to be sensitive to word order. If the clause introduced by *kdor* follows the main clause, only the reading as a regular relative construction is possible, as illustrated in (19) (see Sonnenhauser 2019 and Arsenijević 2009b for a more detailed discussion):

- (19) najдите koga, komur boste lahko odkrili sebe  
 find.2PL.IMP someone to.whom be.2PL.FUT easily open.I-PTCP REFL  
 (Slv; Gigafida: *Dnevnik* 2000)  
 ‘find someone to *whom* you can open up’

#### 4.1.2.5 Juxtaposition ~ conditional structure

In the older stages of the Slavic vernaculars, we frequently find constructions that oscillate between the simple juxtaposition of clauses and a conditional structure. The clauses are often introduced by multi-functional connectives, as the following examples show. In (19), both the first and the second clauses are preceded by a connective (*a, ino*), in (20) only the second clause (*ini*).

- (20) a. černo roditsja ino emu něтъ ničevo  
 and black is\_born.3SG.PRS ino him.DAT.SG.M NEG nothing  
 (Old Ru; Afanasij Nikitin; Troickij izvod 382v)  
 ‘and (if) [she] has a black child, *and* [they won’t give] him [the merchant] anything’

- (21) pošel ili prišel ini sja klanjajut po černečesky  
 go.PST.SG.M OR COME.PST.SG.M ini REFL bow.3PL.PRS monkish  
 obe ruki do zemli dotyčjut a  
 both hand.NOM.SG.F to ground.GEN.SG.F touch.3PL.PRS and  
 ne govorit ničego  
 NEG say.3SG.PRS NEG.GEN.SG  
 (Old Ru; Afanasij Nikitin; Archivnyj spisok 204v)  
 ‘(someone) left or came, and [he] bows [lit.: (they) bow] in a monkish way, both hands  
 touch the ground and [he] doesn’t say anything’

In example (20) we have no formal indication as to the referential status of the proposition in the first clause. If it has hypothetical status, the whole structure is likely to receive a conditional interpretation, whereas a factual reading suggests a temporal or causal nexus of the propositions. In (21) the hypothetical quality of the first clause is expressed by a disjunction ( $p$  or  $q$ ).<sup>11</sup>

## 4.2 Triggers of oscillation

In the previous sections, we identified several dimensions of oscillation. Based on the examples discussed above, we will now systematize the syntactic and semantic features that cause or reinforce oscillation in a structure. While we cannot offer an exhaustive list, we have found that triggers of oscillation relate to both quantity and quality of the linguistic material. Absence as well as redundancy of cohesive devices may cause oscillation. In addition, the use of linguistic material that is indeterminate, vague or multifunctional by itself often results in the oscillation of the structure.

### 4.2.1 Absence of cohesive devices

The absence of cohesive devices can be a strong trigger of oscillation. Presuming that language users cannot but interpret a sequence of predications in a way that results in coherent reading,<sup>12</sup> the lack of formal guidance, naturally, opens up a

<sup>11</sup> (21) and similar constructions are related to universal concessive conditionals (Haspelmath & König 1998).

<sup>12</sup> This is very much in line with the principle of relevance formulated in Sperber & Wilson’s (1986) relevance theory. – The multitude of possible interpretations caused by the absence of explicit cohesive devices could probably be managed by a defeasible logic of commonsense entailment as proposed by Lascarides & Asher (1993).



number of possibilities. Cases of oscillation by absence of cohesion are often accompanied by additional features that foster a semantically and pragmatically enriched interpretation of the relation between the clauses. In example (22), both propositions (*X znaet devčonku, X polučaet pis'ma*) are within the scope of a question, which forces the addressee to construct a meaningful relation between them.

- (22) Ty znaeš devčonku on vse polučaet pis'ma?  
 you know.2SG.PRS girl.ACC.SG.F he all receive.3SG.PRS letters.ACC.PL  
 (Ru coll.; Weiss 2019)  
 'Do you know the girl he's always getting letters from?'

The structure in (23) is susceptible to a conditional reading because the disjunction in the first clause (*pošel ili prišel*) makes a purely temporal interpretation less likely.

- (23) pošel ili prišel ini sja klanjajut po černečesky  
 go.PST.SG.M OR come.PST.SG.M ini REFL bow.3PL.PRS monkish  
 obe ruky do zemli dotyčjut a  
 both hand.NOM.SG.F to ground.GEN.SG.F touch.3PL.PRS and  
 ne govorit ničego  
 NEG say.3SG.PRS NEG.GEN.SG  
 (Old Ru; Afanasij Nikitin; Archivnyj spisok 204v)  
 '(someone) left or came, and [he] bows [lit.: (they) bow] in a monkish way, both hands touch the ground and [he] doesn't say anything'

Structures including a *kdor*-clause function similarly (e.g., ex. 4 above).

#### 4.2.2 Indeterminacy of cohesive device

One of the most powerful triggers of oscillation is the semantic vagueness of cohesive devices since in most cases this indeterminacy directly translates into the indeterminacy of the whole structure. Cf. the multifunctional connectives *ino*, *kako* and *naj* in (24)–(26).

- (24) a černo roditsja ino emu něť ničevo  
 and black is\_born.3SG.PRS ino him.DAT.SG.M NEG nothing  
 (Old Ru; Afanasij Nikitin; Troickij izvod 382v)  
 'and (if) [she] has a black child, and [they won't give] him [the merchant] anything'
- (25) No azъ govorju vam, otsega xočete  
 but I tell.1SG.PRS 2PL.DAT from\_now want.2PL.PRS  
 da vidite mene kako ke sedna  
 COMP see.2PL.PRS me how~COMP will sit  
 (Bg; Nedelnic 47r)  
 'But I tell you, from now on you will see me, how ~ that I will sit'

- (26) starega vina primešamo [...], naj  
 old.GEN.SG.N wine.GEN.SG.N add.1PL.PRS such that/let them  
 bodo možilost dobile  
 3PL.FUT virility.ACC.SG.F gain.I-PTCP.PL.F  
 (Slv; IMP: *Čebelarstvo*, 1831)  
 ‘we add some old wine, *such that* they gain virility ~ *let them* gain virility.’

Cohesive elements may also be indeterminate as to their functional or syntactic features. In the following cases, the pronouns *kotoryi* and *ktory* oscillate between a relative and an indefinite function (27) and a relative and a purely anaphoric function (28). As a result, the structures oscillate between a relative construction and a conditional in (27) and an anaphorically related sequence of predications in (28).

- (27) a u kotorye ženy ot gostja  
 and at REL~INDEF.GEN.SG.F woman.GEN.SG.F from merchant.GEN.SG.M  
 začnestsja ditja i muž  
 is\_conceived.3SG.PRS child.NOM.SG.N and man.NOM.SG.M  
 daetʹ alafu  
 give3SG.PRS support.ACC.SG.F  
 (Old Ru; Afanasij Nikitin; Troickij izvod 382)  
 ‘and (if) *some* woman conceives a child from a merchant, and the husband gives [him] financial support’

- (28) dziewczę uranił, ktorą ranę [...]  
 girl.ACC.SG.F hurt.3SG.PST.M which.ACC.SG.F wound.ACC.SG.F  
 (Old Po; Kodeks Działyńskich, 15<sup>th</sup> c.)  
 ‘he hurt a girl, *which* wound [...]’

Note that a structure can contain more than one trigger. Cf. (27) where the functional vagueness of pronoun *kotorye* combines with the semantic vagueness of the connective device *i* and (23), which displays a non-asserted proposition and the functionally/semantically vague connective device *ini*.

## 5 Conclusions and further prospects

As we have shown, syntactic oscillation is a phenomenon of its own right and therefore deserves closer investigation. Both its interpretation and linguistic analysis require strategies and tools different from the ones we need for ambiguous or polysemous structures.

Elaborating a framework for the description and analysis of OS promises to provide additional tools for the syntactic analysis in particular of older stages of a language and non-standardized varieties. Analyzing OS fosters the understanding of the processes that precede more explicit ways of expressing oneself. The oscillating

status can be followed by certain explicit variants that spell out several options for interpretation. This, in turn, could provide a potential base for reanalysis or similar processes and thus gateways to syntactic change.

In addition, acknowledging oscillation as a phenomenon *sui generis* provides new prospects for the annotation of corpora for non-standardized varieties. The available tools force the annotator to make a choice where the data defy a clear categorization (see the discussion in Eckhoff 2021). Such technically conditioned restrictions influence corpus searches and their results and thus also impact the analysis.

Last, but not least, a better understanding of how OS function is an important factor in the investigation of phenomena that are related to questions of register, such as the *Schriftlichkeit* and *Mündlichkeit* dichotomy (cf. Koch & Oesterreicher 1986) since the degree of explicitness often correlates with the degree of formality.

In a larger perspective, the present paper provides the basis for a more encompassing research programme from a cross-linguistic point of view. The first step in this process is to generate a sufficient amount of data by matching OS with possible diachronic, diastratic, and diaphasic correspondences on a large scale. Ultimately, we want to put a new perspective on diachronic syntactic change in creating a typology of OS as a basis for a typology of reanalysis processes.

## Online resources

Gigafida: <http://www.gigafida.net/>. September 10, 2021.

IMP: Jezikovni viri starejše slovenščine IMP, <http://nl.ijs.si/imp/>, September 10, 2021.

## References

- Aarts, Bas (2007): *Syntactic gradience. The nature of grammatical indeterminacy*, Oxford: Oxford University Press.
- Afanasij Nikitin (1986): Troickij izvod, in: Lur'e, Jakov Solomonovič & Leonid Sergejevič Semenov (eds.): *Choženje za tri morja Afanasija Nikitina*, 18–31 Leningrad: Nauka.
- Afanasij Nikitin (2003): Arxivnyj spisok, in: Kozlov (otv. red.): *Xoženje za tri morja Afanasija Nikitina: faksimilie rukopisi XVI v., perevod drevnoruskogo teksta na soemennyj russkij jazyk, stat'i, komentarii*. Tver': Arxivnyj otdel Tverskoj oblasti, 99–111. .
- Andersen, Henning (2001): Actualization and the (uni)directionality of change, in: Henning, Andersen (ed.): *Actualization*, Amsterdam & Philadelphia: Benjamins, 225–248.
- Apresjan, Jurij Derenikovič (1974): Regular polysemy. *Linguistics* 12(142), 5–31.
- Apresjan, Jurij Derenikovič (1995): *Leksičeskaja semantika*. 2-e izdanje, izspr. i dop, Moskva: Jazyki slavjanskaj kul'tury.

- Arsenijević, Boban (2009a): Clausal complementation as relativization. *Lingua* 119, 39–50.
- Arsenijević, Boban (2009b): {Relative {conditional {correlative clauses}}}, in: Lipták, Anikó (ed.): *Correlatives cross-linguistically*, Amsterdam & Philadelphia: Benjamins, 131–156.
- Berité, I. G. & Afanasij Nikitin (1960): *Choženie za tri morja Afanasija Nikitina 1466–1472gg.*, Moskva: Geografiz. (Access under <http://kodeks.uni-bamberg.de/Russia/Russia.html>, December 12, 2022)
- Bod, Rens (2009): Probabilistic linguistics, in: Heine, Bernd & Heiko Narrog (eds.): *The Oxford Handbook of Linguistic Analysis*, Oxford: OUP, 633–662.
- Bresnan, Joan (2007): Is syntactic knowledge probabilistic? Experiments with the English dative alternation, in: Featherston, Sam & Wolfgang Sternefeld (eds.): *Roots: Linguistics in search of its evidential base*, Berlin: Mouton de Gruyter, 77–96.
- Breznik, Anton (1916): *Slovenska slovnica za srednje šole*, Celovec: Družba sv. Mohorja.
- Cristofaro, Sonia (2014): Is there really a syntactic category of subordination? in: Visaää, Laura, Kallio-koski, Jyrki & Helena Sorva (eds.): *Contexts of subordination: cognitive, typological and discourse perspectives*, Amsterdam & Philadelphia: Benjamins, 73–91.
- Daneš, František (1982): Zur Theorie des sprachlichen Zeichensystems, in: Scharnhorst, Jürgen & Erika Ising (eds.): *Grundlagen der Sprachkultur. Beiträge der Prager Linguistik zur Sprachtheorie und Sprachpflege. Bd. 2*, Berlin: Akademie Verlag, 132–173.
- Denison, David (2017): Ambiguity and vagueness in historical change, in: Hundt, Marianne/ Mollin, Sandra & Simone Pfenninger (eds.): *The changing English language: Psycholinguistic perspectives*, Cambridge: Cambridge University Press, 292–318.
- Eckhoff, Hanne (2021): The history of Slavonic clausal complementation: A corpus view, in: Sonnenhauser, Barbara & Björn Wiemer (eds.): *Clausal complementation in South Slavic*, Berlin & Boston: Mouton de Gruyter, 387–414.
- Gast, Volker & Holger Diessel (2012): The typology of clause linkage: Status quo, challenges, prospects, in: Gast, Volker & Holger Diessel (eds.): *Clause linkage in cross-linguistic perspective*, Berlin & Boston: Mouton de Gruyter, 1–36.
- Gast, Volker & Martin Schäfer (2012): A quantitative investigation of hybrid adjunct clauses in Latin, in: Gast, Volker & Holger Diessel (eds.): *Clause linkage in cross-linguistic perspective*, Berlin & Boston: Mouton de Gruyter, 363–39.
- Gillon, Brendan S. (2004): Ambiguity, indeterminacy, deixis, and vagueness, in: Davis, Steven & Brendan S. Gillon (eds.): *Semantics (a reader)*, Oxford: Oxford University Press, 157–187.
- Grosu, Alexander & Fred Landman (1998): Strange relatives of the third kind, *Natural Language Semantics* 6, 125–170.
- Haspelmath, Martin & Ekkehard König (1998): Concessive conditionals in the languages of Europe, in Auwera, Johan van der (ed.): *Adverbial Constructions in the Languages of Europe*, Berlin New York: Mouton de Gruyter, 563–640.
- Jakobson, Roman (1971[1957]): Zeichen und System der Sprache, in: Jakobson, Roman: *Selected Writings II: Word and Language*, The Hague: Mouton, 272–279.
- Koch, Peter & Wulf Oesterreicher (1986): Sprache der Nähe – Sprache der Distanz. Mündlichkeit und Schriftlichkeit im Spannungsfeld von Sprachtheorie und Sprachgeschichte, *Romanistisches Jahrbuch* 36, 15–43.
- Krapova, Iliyana (2010): Bulgarian relative and factive clauses with an invariant complementizer, *Lingua* 120, 1240–1272.
- Lascarides, Alex & Nicholas Asher (1993): Temporal interpretations, discourse relations and common-sense entailment, *Linguistics and Philosophy* 16(5), 437–493.
- Manning, Christopher (2003): Probabilistic syntax, in: Bod, Rens/Hay, Jennifer & Stefanie Jannedy (eds.): *Probabilistic linguistics*, Cambridge (MA): MIT Press, 289–341.

- Meyer, Roland (2017): The C system of relative and complement clauses in the history of Slavic languages, *Language* 9(2), 97–113.
- Murelli, Adriano (2011): *Relative constructions in European non-standard varieties*. Berlin, Boston: de Gruyter.
- Nedelnik= Sofronij Vračanskij. 1806. *Nedelnik*. Rimnik.
- Nikitin, Afanasij (1986): Troickij izvod, in: Lur'e, Ja. S. & L.S. Semenov (eds.): *Choženje za tri morja Afanasija Nikitina*, Leningrad: Nauka, 18–31.
- PE 1868: Sofronij Vračanski, *Poučitelno evangelié* 1868.
- Rudin, Catherine (2013): *Aspects of Bulgarian syntax. Complementizers and wh-constructions*, Bloomington: Slavica.
- Sonnenhauser, Barbara (2019): Interrogative, indefinite, relative *kdo(r)*. Why Slovene is (not so) different, *Zeitschrift für Slavische Philologie* 75(1), 151–181.
- Sonnenhauser, Barbara (2021): Slovene *naj*: An (emerging) complementiser? In Sonnenhauser, Barbara & Björn Wiemer (eds.): *Clausal complementation in South Slavic*, Berlin & Boston: Mouton de Gruyter, 442–475.
- Sperber, Dan & Deirdre Wilson (1986): *Relevance Theory*, Oxford: Blackwell.
- Topolinjska, Zuzanna (1997): Relativization – a strategy for noun phrase complementation? (Relative Clauses in the Macedonian Tărlis manuscript), *Balkanistica* 10, 292–381.
- Topolińska, Zuzanna (1998): Polish *że* – all-powerful introducer of new clauses, in: Grochowski, Maciej & Gerd Hentschel (eds.): *Funktionswörter im Polnischen*, Oldenburg: Bis, 219–237.
- van der Auwera, Johan & Dubravko Kučanda (1985): Pronoun or conjunction – the Serbo-Croatian invariant relativizer *što*, *Linguistics* 23(6), 917–962.
- van Gelderen, Elly (2009): Renewal in the left periphery: Economy and the complementizer layer, *Transactions of the Philological Society* 107(2), 131–195.
- van Gelderen, Elly (2015): The particle *how*, in: Bayer, Josef/Hinterhölzl, Roland & Andreas Trotzke (eds.): *Discourse-oriented syntax*, Amsterdam & Philadelphia: Benjamins, 159–174.
- Wasow, Thomas (2015): Ambiguity avoidance is overrated, in: Winkler, Susanne (ed.): *Ambiguity. Language and communication*, Berlin & Boston: Mouton de Gruyter, 29–47.
- Weiss, Daniel (2019): Zero linking in Russian colloquial relativization, *Zeitschrift für Slavische Philologie* 75(1), 95–122.