Scrambling and V-positioning in Slavic languages – exceptionally VO or regular T3?

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1. Introduction

The two major syntactic types traditionally recognized by grammar theory and grammar typology are the head-final ('OV') and the head-initial ('VO') type. This classification presupposes a *fixed* position of the *head* of a phrase, either following or preceding its dependants. This partitioning is not exhaustive, however. It crucially disregards a *third* option: '*variable'* head positioning due to the underspecification of the directionality value of the head. The syntactic consequence of this parameter setting option is what we shall call the *Third type* (T3). It comprises structures known from OV, structures known from VO, and crucially a third pattern of structures that are neither found in OV nor in VO. Disregarding this third subset of patterns or explaining it away as an exception has made it possible to inadequately file a T3 language as an exceptional VO language.

Slavic languages are usually analysed as head-initial ('VO') (cf. among others Bailyn 1995, 2002, Junghanns & Zybatow 1997, Slioussar 2007), but most of their robust syntactic properties systematically *contradict* what is known as uncontroversial properties of head-initial languages, both in the realm of clause structure as well as in the structure of complex nominal phrases. This paper provides a wide range of cross-linguistic data from each of the three groups of Slavic languages that call for a revision of the syntactically insufficiently founded assumption that Slavic languages are appropriately characterized when they are categorised as VO languages.

The miscategorisation is the result of the abovementioned forced choice imposed by grammar theory and grammar typology. Neither type fully covers the pertinent properties of Slavic languages, but for the VO-miscategorisation, the mismatch has been less obvious. As a consequence, it will be argued that the OV vs. VO opposition does not partition the set of languages properly. We shall argue that Slavic languages are regular T3 languages rather than highly exceptional VO languages.

T3 is the obvious third option, next to OV and VO. The head-final (OV) organization follows from '*regressive'* directionality. The dependent items *precede* the head. '*Progressive'* directionality yields head-initial phrases (VO). The dependent items *follow* the head. The third type is the result of *underspecified* directionality. A dependent item may precede the head (like in OV) or follow it (like in VO).

The documented history of Indo-European languages is a history of T3 languages. The Slavic languages have retained this property. The Germanic languages replaced the underspecified directionality by a fixed one, and split into two groups, one with regressive and one with progressive directionality, namely the continental West Germanic group (Dutch, Frisian, German), and English and the North Germanic group. The Romance languages are the successors of a T3 language, namely Latin. They all developed into strict VO languages.

This paper will present a representative set of independent syntactic properties of Slavic languages, all of which are absent in VO languages, and all of which are indicative of the T3 qualities of Slavic languages. It will turn out that Slavic languages are by no means exceptional. They are regular T3 languages rather than unpredictably exceptional VO languages.
Overgeneralizing properties of a frequent and familiar type (namely VO) or – at worst – elevating it to the universal type is an unfortunate quality of the present day situation in grammar theory. What is more detrimental, however, is first the misclassification of T3 languages as 'VO' and second, the misapprehension of T3-properties as (exceptional) VO-properties. It voids the predictive power of grammar theory with respect to the properties entailed by word order patterns and in particular by the position of the head of a phrase in relation to its complements.

2. What it means to be VO

In a typical VO language, phrases are head-initial, that is the head precedes its complements. For the major phrasal categories this means that VP, NP, AP and PP are head-initial, as illustrated in (1) with examples from English:

(1) a. [$_{VP}$ *demonstrate*$_{V°}$ us the difference]
b. [$_{NP}$ *demonstration*$_{N°}$ of the difference to us]
c. [$_{AP}$ *typical*$_{A°}$ for a class]
d. [$_{PP}$ *for*$_{P°}$ a class]

The syntactic profile of an uncontroversial SVO language includes the following characteristics that will be shown to follow from the property of being head-initial. These non-exhaustive list of properties is characteristic of VO and these properties are absent in OV or T3.

i. The *order of nominal arguments* is *strict*. There is no order variation among objects. They must neither be reordered nor can they be fronted across the verb into positions between the subject and the verb or across the subject. In other words, they must not be scrambled.
ii. The verb and its nominal arguments form a *compact* syntactic unit. Material *intervening* between the verb and a nominal object (e.g. adverbials) makes the sequence ungrammatical.[1]
iii. The relative *order of the verb, auxiliaries and quasi-auxiliaries* within a simple clause is *strict*, with no (free) variation.
iv. Adjuncts to head-*initial* phrases (i.e. preverbal adverbials in the case of VP and prenominal attributes in the case of NP) display an *edge effect*. This means that the head of the preceding adjunct must be adjacent to the phrase it is adjoined to. Material following the head renders the construction ungrammatical

[1] This adjacency property may be concealed if the finite verb may move out of the VP, across an adverbial adjoined to the VP, as in Romance languages (cf. among many others Pollock 1989).

v. Phrases that are transparent for the extraction of subparts (e.g. in case of question-, relative clause formation or topicalization) in their postverbal positions are *closed* for extraction in *preverbal* positions.
vi. In multiple questions, a question phrase must not be fronted across co-arguments and in particular not across a subject-interrogative.

These properties of an SVO-profile (exemplified in 2) are in sharp contrast with an SOV-profile of phrase and clause structure. German (3) is a representative case for an OV organization of a clause, since the VP is head final in German. The following examples from English and German are to illustrate the contrasts. The order of the examples in (2) follows the above listed properties:

(2) a. that he forgives sinners their sins vs. *that he their $sins_i$ forgives sinners e_i
b. completely disassemble the clock vs. *disassemble *completely* the clock
c. He *has been explaining* the problem vs. *He *explaining has been* the problem
d. He has [[not so often (*as everyone else)] committed these mistakes]
e. $What_i$ did they recommend [eating $-_i$] vs. *$What_i$ was [eating $-_i$] recommended?
f. *What* shocked *whom*? vs. **Whom* did *what* shock?

German is the exact counterpart of the VO setting, but, crucially, not in complementary distribution with VO languages. What is ruled out in English is grammatical in German, in *addition* to the other grammatical versions. This is not an idiosyncrasy of German, of course, but merely reflects its OV profile:

(3) a. dass er $Sündern_{Dat}$ ihre $Sünden_{Acc}$ vergibt / ihre $Sünden_{Acc}$ $Sündern_{Dat}$ vergibt
that he sinners their sins forgive / their sins sinners forgives
b. [$Uhren_{Acc}$ *vollständig*$_{Adv}$ zerlegen]
clocks completely disassemble]
c. dass man es $prüfen_{V\text{-}Inf}$ $müssen_{V\text{-}Inf}$ $wird_{Aux\text{-}fin}$ /prüfen *wird* müssen /*wird* prüfen müssen.
that one it examine have-to shall /examine shall have-to / shall examine have-to
d. [diese $Fehler_{Acc}$ [nicht so oft (wie jeder andere)]$_{Adv}$ begehen].
these mistake [not as often (as everyone else)] commit
e. Welche $Tür_i$ hätte denn [$-_i$ damit zu öffnen] keiner geschafft?
which $door_i$ would have PRT [e_i with-it to open] nobody managed?
f. Was hat wen schockiert? vs. Wen hat was schockiert?
what has whom shocked vs. whom has what shocked?

Let us now turn to Slavic languages and check their syntactic profile. Even little knowledge of Slavic languages suffices to quickly realize that they do not instantiate a clear-cut VO profile. In fact, they flatly violate the expectations nourished by assigning them to the set of VO languages:
The order of arguments in a clause is notoriously free. The subject and the objects 'may change places' and they may principally come in any order, pre- or postverbally, information

structure differences notwithstanding. This is a property that is completely alien to VO languages. So, this property calls for exceptional measures. Slavic languages are said to *scramble* 'excessively'. What this means is this: The basic organization of a clause is supposed to be the same as in English, that is, a standard VO clause structure (4a). The crucial difference between English and a Slavic language is seen in their freedom of *scrambling*. Any object may be fronted within the clause (4b,c), thereby keeping (4b) or changing (4c,d) the relative order of the objects and the subject:

(4) a. čto Maša [*pokazyvaet* Petru svoj dom]. Russian
that Maša_{NOM} shows Petr_{DAT} her $\text{house}_{\text{ACC}}$
'... that Maša is showing her house to Petr.'
b. čto Maša Petru *pokazyvaet* svoj dom.
c. čto Maša svoj dom *pokazyvaet* Petru.
d. čto Petru Maša *pokazyvaet* svoj dom.

Scrambling is a critical property for an appropriate type assignment since these word order variations are ungrammatical in uncontroversial VO languages. We shall argue that these patterns are typical for T3. Acknowledging T3 removes theses exceptional properties from VO immediately.

The relative order of verbs in a simple clause in VO languages is strict and it follows from the dependency relations. The dependent verb follows. There is no order variation at all. No verb in (5a) can be reordered in English or any other uncontroversial VO language. For the Germanic OV languages on the other hand, order variation is typical, as illustrated by (5b-d).

(5) a. that he *should have eaten* it
b. dass er es essen müssen *wird*
that he it eat have-to will
c. dass er es essen *wird* müssen
d. dass er es *wird* essen müssen

In OV and T3, verbs in head-final positions are clustering. This goes together with order variation on the cluster (see Haider 2010, ch. 7). Polish provides an illustration of verb order variation in a Slavic language. In (6a) the main verb precedes the finite modal, in (6b) it follows.

(6) a. We wtorek *poukładać musisz* w szafie. Polish
on Tuesday clean-up $\text{must}_{2:\text{SG}}$ in cupboard
'On Tuesday, you have to clean up the cupboard.'
b. We wtorek *musisz poukładać* w szafie.
on Tuesday $\text{must}_{2:\text{SG}}$ clean-up in cupboard
'On Tuesday, you have to clean up the cupboard.'

Let us turn now to the *edge effect*. This is a particularly clear indicator of head-initial phrases. A comparison between German and English is instructive here. English is head-initial in general, with an edge effect for VP and NP (7a,c).

(7) a. He has [[much more *politely* (*than anyone else)] [greeted her]].
b. Er hat sie [[sehr viel *höflicher* (als jeder andere)] [begrüßt]].
he has her much more politely (than anyone else) greeted
c. the [[much *higher* (*than any other building)] [edifice]]
d. das [[viele *höhere* (*als jedes andere Gebäude) [Bauwerk]]
the much higher (than every other building) edifice

German is head-final for VPs but head-initial for NPs. Hence the edge effect is operative only for adjuncts to NPs in German (7c). Moreover, German has a productive V-to-N conversion by means of nominalizing the infinitival form of the verb. This provides us with a minimal pair context for VP and NP, not only for checking the edge-effect but also for checking the predictions on compactness and scrambling, compare (8) with (9). The head-initial NP is compact and does not tolerate scrambling.

(8) a. [an Obdachlose öfter (*als erwartet*) Decken verteilen]$_{VP}$ (no edge-effect)
to homeless more-often (than expected) distribute
b. [Decken an Obdachlose (*kostenlos*) verteilen]$_{VP}$ (not compact)
blankets to homeless (for free) distribute
b. [an Obdachlose$_i$ Decken e$_i$ (kostenlos) verteilen]$_{VP}$ (scrambling)
to homeless blankets (for free) distribute

(9) a. das [so häufige (**wie nötig*) [Verteilen von Decken]$_{NP}$]$_{NP}$ (edge effect)
the so often (as necessary) distribut(ing) of blankets
b. das [Verteilen (**im Winter*) von Decken an Obdachlose]$_{NP}$ (compact)
the distribut(ing) (in winter) of blankets to homeless
c. [das Verteilen an Obdachlose$_i$??von/*der$_{Gen.}$ Decken e$_i$]$_{NP}$ (no scrambling)
the distribut(ing) to homeless of/the blankets

Here is the prediction for Slavic. If Slavic languages are VO, the edge effect will apply to VPs and NPs, without exceptions. If they are T3, however, the edge effect will not apply to preverbal adjuncts of VPs. Moreover, for those languages, whose NPs are T3, too, there will be no edge effect for prenominal attributes either.
The edge effect applies when the adjunct is not within the *directionality domain* of the head of the phrase that serves as the target of adjunction. This is the case if an adjunct (adverbial, attribute) *precedes* a head-initial phrase, since the directionality domain of the head of a head-initial phrase is its c-command domain on the appropriate 'side' of the phrase, that is after the verb or noun in the case of head-initial phrases. If the Slavic VP were strictly head-initial this would entail a head with strictly progressive directionality and this would trigger an edge effect. If, on the other hand, the VP in Slavic languages is T3, then the directionality of the verbal head is ambi-directional and the absence of the edge effect is predictable, since the directionality domain is partly progressive, partly regressive. Analogous considerations apply to the NP. (10) shows that there is no edge effect for preverbal adjuncts in Russian.

(10) V prošlom godu [[gorazdo bol'še *čem Igor*] *vyigrala* tol'ko Maša] Russian
in previous year [much more *than Igor*] *won* only Mary
'Last year, only Mary has much more won than Igor.'

Let us proceed again to VO-sensitive restrictions on extraction domains. In VO, extraction is licit if the extraction site is contained in a postverbal phrase, but extraction is strictly ungrammatical for preverbal phrases. 'Postverbal' means within the directionality domain of the head, whereas 'preverbal' means outside the directionality domain. Typical contrasts from English are given in (11).

(11) a. What$_i$ would he dislike [eating e$_i$]?
b. *What$_i$ would [eating e$_i$] be dangerous?
c. It is unclear what$_i$ he took [a picture of e$_i$]
d. *It is unclear what$_i$ [a picture of e$_i$] should be taken?

In Slavic languages, *preverbal* DPs are not opaque. This is clear counterevidence for the VO-hypothesis on the one hand, and on the other hand, the very phenomenon – left branch extraction (LBE) – is a scandal for accounts that assume Russian to be strictly head-initial, that is VO. (12) illustrates two instances of LBE. (12a) is LBE with question formation; (12b) is LBE with topicalization.

(12) a. Kakuju$_i$ Ivan [-$_i$ mašinu] *kupil* svoej žene? Russian
which$_i$ Ivan [-$_i$ car] *bought* his wife
'Which car did Ivan buy his wife?'
b. Japonskuju$_i$ Ivan [-$_i$ mašinu] *kupil* svoej žene.
Japanese$_i$ Ivan [-$_i$ car] *bought* for his wife
'A Japanese car, Ivan bought for his wife.'

Both constructions follow straightforwardly from a T3 grammar. In the T3 system, the preverbal DPs are *within* the directionality domain of the ambi-directional head, just like the postverbal positions. This is a direct consequence of the ambi-directional licensing property of heads in a T3 grammar. In a VO language like English, only postverbal DPs are in the directionality domain, and in an OV language, the directionality domain of the verbal head is preverbal.
Finally, the *distribution of question words* in multiple questions provides evidence for deciding whether a language is VO or T3. For VO languages, there is a restriction that is absent in OV and T3. An interrogative subject must not be crossed by fronting an interrogative object, cf. the contrast in (13).

(13) a. *Who(m) has what shocked?
b. *It is unclear who(m) what has shocked
c. What has shocked who(m)?
d. It is unclear what has shocked who(m)

In OV languages, there is no asymmetry of this kind. Both orders are grammatical and acceptable, cf. (14), the German counterparts to the English examples in (13).

(14) a. Wen hat was schockiert?
whom has what shocked
b. Es ist unklar, wen was schockiert hat
it is unclear whom what shocked has
c. Was hat wen schockiert?
d. Es ist unklar, was wen schockiert hat

A detailed cross-linguistic explication of this phenomenon can be consulted in Haider (2010, ch. 3.4). The crucial point is that in VO, the subject is VP-external. It is assigned to a unique structural position reserved for the subject.[2] In OV and T3, the subject remains in its original position within the directionality domain of the verbal head, viz. the VP.

Slavic languages exhibit multiple fronting of *wh*-words (cf. among many others Rudin 1988, Bošković 1997, 1998, Meyer 2003, 2004). Depending on the nature of the *wh*-phrase, most Slavic languages show stronger, weaker or even no preferences for an order of multiply fronted *wh*-words which mirrors the syntactic hierarchy of the presumed respective base positions (cf. Meyer 2004 for extensive empirical material on Russian, Polish and Czech), but, at least with respect to root clauses, Slavic languages – with few exceptions – do not exhibit superiority effects.

The examples in (15) are from Czech, since it is one of the Slavic languages where *wh*-phrases arguably do not form a single constituent which is fronted to the sentence initial position.[3] Czech fronts all interrogative phrases to the left[4], but allows for material intervening between the initial *wh*-phrase and a second one. This is not only true for clitic elements such as clitic pronouns which, by and large, observe a second position restriction, cf. (15b,c), but also for non-clitic auxiliaries as in (15e).

(15) a. Kdo co doporučil komisi? (Meyer 2004, 253)
who$_{NOM}$ what$_{ACC}$ recommended committee$_{DAT}$
'Who recommended what to the committee?'
b. Co kdo doporučil komisi?
what$_{ACC}$ who$_{NOM}$ recommended committee$_{DAT}$
c. Kdo *ho* kde videl je nejasné? (Toman 1981, 298)
who him$_{CLITIC}$ where saw is unclear
d. *Kdo kde *ho* videl je nejasné?
who where him$_{CLITIC}$ saw is unclear
e. … kdo se bude čemu věnovat … ? (Meyer 2004, 222)
who refl-clitic will what$_{DAT}$ apply
'Who will apply himself to what?'

[2] In Generative terminology, the structural subject position is the specifier position of a functional head F°. The head position is the position of the finite auxiliary or of the expletive auxiliary 'do'.
i. [In English, [$_{FP}$ a subject$_i$ [$_{F'}$ does$_{F°}$ [not [e$_i$ follow an object]]]]]
[3] This is a common analysis for Bulgarian which has superiority effects (cf. Rudin 1988, Bošković 1997, 1998).
[4] *Wh*-final position is restricted to so-called echo questions (cf. Meyer 2004 for a detailed discussion).

As illustrated by (15a,b), there is no superiority effect in Czech. Like in German, the interrogative object may be fronted across an interrogative subject. With inanimate objects, there is not even a preferred order. With an animate object *wh*-phrase, *koho* 'whom', instead of *co* 'what' in (15a,b), there is a preference for the order subject > object, but the order object > subject is by no means ungrammatical (cf. Meyer 2004 for details). This indicates that the subject is within the directionality domain of the verb.[5] Hence Czech would violate a restriction that commonly applies to VO languages. If Czech is T3, no violation can arise and the facts are appropriately covered.

The conclusion of this introductory survey is as follows. If the data discussed above are representative – this will be shown in section 4 – Slavic languages must not be categorised as VO languages. They violate core restrictions of VO languages. They are not exceptional either. Slavic languages merely have been miscategorized. They are regular T3 languages. In T3 languages, a sufficiently large subset of word order possibilities is congruent with the VO pattern. This has been the basis for the miscategorisation.

3. VO, OV and T3 – in a nutshell

This section briefly expounds the grammar theoretical background for distinguishing the three types, namely head-initial, head-final and T3 organization of phrase structure. An in-depth exposition can be found in Haider (2010 ch.1) and Haider (in press; ch. 3 and 5). The core theoretical assumptions are the following:

i. Phrases are right-branching and endocentric.
ii. A dependent phrase is licensed[6] by the head in the *canonical direction*.
iii. The alternative values for '*canonical direction*' are {'follow', 'precede'}, with {'unspecified'} as the general underspecification option for binary featured values.

Clause (iii) is the source of three distinct types of phrase structure. (16a,b) illustrates the head-*final* type for V° and N°, respectively; (16c,d) are patterns of the head-*initial* type. T3 is in fact the aggregate of (16e,f) *plus* (16a,b,c,d). T3 is the result of ambi-directional headedness: For ZP in (16e), V is head-initial. For the higher arguments it is head-final. (16a) and (16c) are licit T3 verb phrases, too, with a uniform choice of the canonical directionality, just as in OV or VO, respectively.

(16) a. [ZP V°], [YP [ZP V°]], [XP [YP [ZP V°]; head-final structures
b. [YP N°], [XP [YP N°];
c. [V° ZP], [$V°_i$ [YP [$-_i$ ZP]]], [XP [$V°_i$ [YP [$-_i$ ZP]]]]; head-initial structures
d. [N° ZP], [N_i° [YP [$-_i$ ZP]]];
e. [XP [YP [V° ZP]]] T3 structure *subset*
f. [YP [N° ZP]]

[5] Sturgeon (2007) argues that the interrogative elements that follow the position of the second position clitic in (14c) are adjoined to VP. This is what is predicted by the T3 hypothesis.
[6] A head *h* licenses a dependent phrase *P* $\equiv_{Def.}$ (a projection of) *h* and *P minimally* and *mutually c-command* each other (Haider 2010:29).

The patterns (16a,b) result from regressive directionality ("←"). (16c,d) are the results of progressive directionality ("→"). VO is an abbreviation for progressive directionality, hence the patterns (16c,d) are characteristic of VO languages. Conversely, OV is an abbreviation for regressive directionality. T3 is the type with *flexible* directionality. The directionality value is underspecified, hence at any level in the structure, the directionality can but need not be switched. This leaves (16e,f) as the subset that is compatible only with T3, since these patterns can arise only in T3. In the T3 patterns in (16e,f), the directionality is switched in the course of the syntactic derivation. (16e) is head-initial for the lowest subtree, but head-final for the higher portions of the tree.

It is not surprising, therefore, that for descriptive as well as theoretical linguists, T3 structures may look like instances of 'anything goes.'[7] This impression is misleading, however. The structural relations are far from 'anything goes'. They are strictly right-branching, and directionality dependent relations (see edge effect, extraction out of preverbal constituents) clearly differ from string-identical head-initial structures of VO languages, but grammatical restrictions show where they are expected.

Compactness and *strict word* order in VO languages follow immediately from clause (ii). Let us emphasize that the *very same* principle, applied in two different structural contexts produces the different outcomes. The multiple instantiation of the V position in a complex verb phrase in VO, induced by the mismatch of the canonical direction and the general direction of branching, makes the VO verb phrase *compact* and the verb order *rigid*. In OV, the canonical directionality is congruent with the general branching direction, hence licensing becomes a relation between sister nodes. This is the reason for the lack of compactness. Let us explain this briefly.

In an OV verb phrase, every complement phrase has a projection of the verbal head as its sister node in the required direction. Hence, *mutual minimal c-command* is trivially fulfilled, cf. (17a). In VO verb phrases, however, mutual c-command between the verb and its dependants is guaranteed by an antecedent-gap relation since for progressive directionality, the verbal projection node is on 'the wrong side' (17b).

(17) a. $[_{VP}\ XP \leftrightarrow [_{V'} YP \leftrightarrow [_{V'}\ ZP \leftrightarrow V°]]]$
b. $[_{VP}\ XP\ [_{V'}\ V_i° \rightarrow [_{V'}\ YP \rightarrow [_{V'}\ e_i \leftrightarrow ZP]]]]$

In (17b), the verb V° minimally c-commands only YP, but not ZP or XP, and it is not mutually c-commanded by YP and ZP. However, the requirements are fulfilled indirectly, via the empty verb position whose antecedent is the overt verb. First, ZP and the *empty verb* mutually and minimally c-command each other. Second, the verbal head of a complex head-initial phrase is 'segmented' into several dependent verb positions, with a single lexical verb as the antecedent. The empty verb position is the base position of the verb as the head of the VP; the surface position is its antecedent in a chain of head positions in the phrase. Since there is only a single verb in a chain, the licensing relations can be applied in any of the chain positions.

[7] Siewierska & Uhlířová (1998:109) worded their syntactic capitulation as follows: "*Apart from the location of clitics there are virtually no syntactic constraints on the ordering of phrases in main declarative clauses*"

This works as follows: On the one hand, the overt verb c-commands YP and on the other hand, YP c-commands the empty chain links. Hence, mutual c-command is fulfilled. Eventually XP, the subject argument, becomes the special case of (17b). It is not within the directionality domain of the verb. As a consequence, SVO language grammars 'provide' an external, functional head for the required directional licensing. This head provides a spec position that accommodates the subject (18a). This is the unique structural subject position of SVO languages. Some languages (e.g. Romance languages) move the finite verb to this position (18b). In English, only auxiliaries are moved, main verbs are inert.[8]

(18) a. $[XP_i\ [F°_{\rightarrow}\ [_{VP}\ e_i\ [V°\ \ldots..]]]]$
b. $[XP_i\ [_{F°}\ V_j°\ \rightarrow\ [_{VP}\ e_i\ [e_j\ \ldots..]]]]$

Let us briefly recapitulate. The difference between OV and VO is an immediate consequence of the inverse directionality requirement. In OV, the directionality requirement matches the universal branching direction. Hence the licensing requirement is fulfilled by the projections nodes of the head of a phase. In VO, however, the projections nodes are directionality-wise on the 'wrong' side and cannot be employed for licensing. Hence the head must be re-instantiated. In OV, licensing is a function of the head and *its projection nodes*. In VO, licensing is a function of the head and *its chain links*.
Compactness is an immediate consequence of the minimality requirement of licensing (clause ii.) in the VO-triggered implementation, i.e., licensing by the head and its chain links. The verb and its dependants must minimally c-command each other. Hence, an intervening adverbial would destroy minimality:

(19) a. $*[_{V'}\ V_i°_{\rightarrow}\ [_{V'}\ \textit{Adv}\ [_{V'}\ YP_{\rightarrow}\ [_{V'}\ e_i \leftrightarrow ZP]]]]$
b. $*[_{V'}\ V_i°_{\rightarrow}\ [_{V'}\ YP_{\rightarrow}\ [_{V'}\ Adv\ [_{V'}\ e_i \leftrightarrow ZP]]]]$

In (19a), the adverb destroys minimality for the verb c-commanding YP, and in (19b), the adverb would destroy the minimal c-command relation for YP with respect to the empty verb. In any case, minimal & mutual c-command is violated. Why does this not affect OV structures? The answer is easy to see (20).

(20) $[_{VP}\ XP \leftrightarrow [_{V'}\ \textit{Adv} \leftrightarrow [_{V'} YP \leftrightarrow [_{V'}\ \textit{Adv} \leftrightarrow [_{V'}\ ZP \leftrightarrow [\ \textit{Adv} \leftrightarrow V°]]]]]]$

Wherever an adverb is adjoined in (20), there will always be a verbal projection with the required regressive directionality, viz. a projection node of the verb that is following the argument. This is the reason for the lack of compactness in head-final phrases.
Note that in (19), the crucial property of the adverb is its status as an *intervening* element. The very same intervener status would block scrambling. If a lower argument is scrambled, this means it is adjoined higher up. This turns the scrambled item into the same kind of intervener

[8] This is one of many exceptional traits of English. In French, for example, any finite verb is treated alike in this respect: Since the negation element (*pas*) follows the functional head position but precedes the VP, any finite verb will precede the negation particle while the non-finite verbs will follow.

element as an adverb. Thus, compactness and the ban against scrambling are just two sides of the same medal.
As for T3, the ambi-directional licensing option in the subset (16e) produces a head-final and head-initial *portion* of a given phrase structure for phrases in which the directionality is switched. The arrows in (21) indicate the directionality of identification. The lowest sub-tree [V ZP] is head-initial, and then directionality switches into head-final.

(21) [XP ←[YP ←[V → ZP]]]

As for the compactness property, Slavic languages clearly differ from regular VO languages (cf. section 4). There is no strict adjacency requirement for the verb and its direct object, or for the objects in a double object construction, as for instance in a VO language like English.[9]

Let us summarize: If Slavic languages are T3, they are predicted to share a substantive subset of structures with VO-languages, and another substantive subset with OV languages. On top of it, they are expected to admit a set of structures that are ungrammatical both in OV and in VO. This is the subset (16e,f).
The wealth of structure variation provided by the T3 grammars of Slavic languages is recruited by other components of the overall grammar system, notably the *information structuring* component (as part of pragmatics). In retrospect, it is not surprising that Slavic grammarians were attracted by information structuring properties, like given and new, focus and background, topic and comment, theme and rheme. Superimposed information structure requirements may create the impression that Slavic sentence structure is determined by information structuring principles. This is misleading. Sentence structure is not *determined* by, but *exploited* for, information structuring. T3 grammars provide the widest range of variability and hence the largest field for superimposing information structure distinctions, like focus, topic, presupposed vs. asserted, and so on.
It is an ironic twist of linguistic history that an SVO language has become the model language of grammar theory, and that T3 languages are still modelled along principles that have been developed on the basis of the structurally most restricted type of languages, namely SVO. Hence it is not surprising that T3 languages appear to be highly exceptional when they are (mis-)analyzed as SVO languages.[10]

4. T3 properties in Slavic languages: a cross-Slavic survey

The following section presents and discusses data from at least on language of each group of Slavic languages (East Slavic, West Slavic, South Slavic) that are crucial for the main issue, namely the allocation of Slavic languages into the VO or the T3 set:

i. variable positioning of the verb rather than variable positioning of objects?
ii. compactness
iii. (missing) edge effect for adjuncts preceding head-initial phrases (VPs, NPs)

[9] For example: *One should not [tell (*needlessly) children (*often) lies*]
[10] Apparently, if you have a hammer, every problem looks like a nail. If you have a grammar theory developed on the basis of VO languages (English, Romance, Scandinavian), every language looks like a VO language.

iv. (in-)variable aux-V order (where applicable)
v. opacity/transparency of preverbal phrases?
vi. variable order of interrogatives

Let us recapitulate. If a Slavic language – let us say Russian – is VO, its basic clause structure is (22a). If it is T3, however, its clause structure is (22b), with (22c-e) as syntactically free variants of V-positioning within the VP:

(22) a. $[_{CP}$ C° [Subject$_i$ $[_{VP}$ e_i $[e_i$ [V°$_j$ [XP $[e_j$ ZP]]]]]]] VO
b. $[_{CP}$ C° [… $[_{VP}$ … V° …]]] T3
c. $[_{CP}$ C° [… $[_{VP}$ Subject [V° [XP $[e_i$ [ZP]]]]]]] T3
d. $[_{CP}$ C° [… $[_{VP}$ Subject [XP [V° ZP]]]]] T3
e. $[_{CP}$ C° [… $[_{VP}$ Subject [XP [ZP V°]]]]] T3

In a VO account, the word orders for (22d) and (22e) must be derived. In each case, objects must be assumed to have been fronted out of the VP, across the verbal head. This is usually called 'scrambling', but unlike genuine scrambling, the relative order of the arguments remains unchanged. Let us emphasize that there is no VO language in the Germanic or Romance group that would allow this kind of scrambling, that is, optional fronting of an object across the verbal head, targeting positions between the subject and the verb. Even in Faroese and Icelandic with morphologically distinct case marking of the objects, an object must not be 'scrambled' across the verbal head. So, the assumption of 'scrambling' is a hypothesis that needs to be supported independently.
Take for instance (22e). Under the T3 hypothesis, the order XP-ZP-V (with XP and ZP as two nominal objects) is a base order, like in an OV-type VP. Under the VO-account, the two objects must be assumed to be in derived positions, as indicated in (23). In the T3 analysis, XP and ZP are in their base positions. The three patterns (22c-e) differ only with respect to the verb position.

(23) $[XP_i\ [ZP_k\ [V°_j\ [e_i\ [e_j\ e_k]]]]]$

Given this situation, it is not difficult to derive predictions against the background of the respective grammar theories which can be checked empirically. Let us assume that ZP in (23) is in a scrambled position to the left of the head of the VP, as the SVO-hypothesis entails. In this case, elements that do not scramble are predicted to be ungrammatical in this position. If, on the other hand, ZP is a base position, as entailed by the T3 account, scrambling is not involved, hence the position is available *and* there should be no restrictions on elements in the ZP position in (23) that apply to moved constituents (e.g. extraction out of moved phrases).
Here is a restriction that is easy to check. In-situ interrogatives, that is, interrogatives not fronted to the clause initial position, do not alternatively occur in preverbal positions in a VO language, as illustrated by English (24a), or in scrambled positions, as in German (24b).[11] In

[11] (24b) would be acceptable only as an 'echo'-question, that is, in reaction to an immediately preceding utterance with an item that the hearer did not perceive properly. The hearer would repeat the utterance and replace the ill-perceived item by a question word. Echo-questions are not subject to grammatical restrictions, crucially.

Russian, and in other Slavic languages, interrogatives are fully grammatical in preverbal positions (24c).

(24) a. *The parliament has *how often* rejected the bill?
b. *Während des Krieges hat in Britannien *was*$_i$ der Premierminister e$_i$ angeordnet?
during the war has in Britain *what* the prime-minister commanded?
c. Ivan *kogo* videl?
Ivan *whom* saw?
'Ivan saw whom?'

Let us now briefly call up testimonial data from the three Slavic subgroups, following the order of presentation above.
We will start with the *variable positioning of the verb*. As already shown in (4) for Russian, the position of the finite main verb is variable. The same is true for other Slavic languages, cf. (25) for Polish and (26) for BCS. This variability is, of course, subject to information structural restrictions in the sense of what has been said in the last paragraphs of the previous section. Ultimately, this means that not all word orders in (4), (25) and (26) are equally frequent and equally neutral. Neutral in this context means that a particular word order is compatible with a wider range of contexts including VP focus and maximal focus. Some of the word order patterns in (4), (25) and (26) are information structurally very restricted, but, in principle, grammatical.

(25) a. że Basia *pokazuje* Jarkowi swój dom. Polish
that Basia$_{NOM}$ shows Jarek$_{DAT}$ her house$_{ACC}$
'... that Basia is showing Jarek her house.'
b. że Basia Jarkowi *pokazuje* swój dom.
c. że Basia Jarkowi swój dom *pokazuje*.
d. że Jarkowi Basia *pokazuje* swój dom.

(26) a. da Petar *piše* Mariji pismo. BCS
that Petar$_{NOM}$ writes Marija$_{DAT}$ letter$_{ACC}$
'... that Petar is writing a letter to Marija.'
b. da Petar Mariji *piše* pismo.
c. da Petar Mariji pismo *piše*.
d. da Mariji Petar *piše* pismo.

As for *compactness*, it has been sometimes claimed in the literature (cf. Bailyn 2002) that in Russian, an adverbial must not intervene between the verb and the direct object when the verb precedes the object. So, Bailyn (2002: 282) assigns an ungrammaticality-asterisk to the example in (27b). These judgements, however, are not confirmed by our informants. The word order is often classified as marginal by informants, but this is due to its restricted information structural status. This means that there are no compactness effects in Slavic languages, cf. also the data from BCS and Polish in (28).

(27) a. Ja dumaju čto Ivan [*často* [celuet Mašu]$_{VP}$]$_{VP}$ Russian
I think that Ivan *often* kisses Maša
'I think that Ivan often kisses Maša.'
b. $^{(?)}$Ja dumaju čto Ivan [celuet *často* Mašu]$_{VP}$
I think that Ivan kisses *often* Maša
c. Ja dumaju čto Ivan [Mašu *často* celuet]$_{VP}$
I think that Ivan Maša *often* kisses

(28) a. Nikola piše *često* pisma. BCS
Nikola writes *often* letters
'Nikola often writes letters.'
b. Marek pisał *często* listy. Polish
Marek wrote *often* letters
'Marek often wrote letters.'

As shown in (10), Russian has another surprising property for VO language. Like German, it lacks the *edge effect* for adverbial adjuncts in contrast to VO languages as English. Russian allows for complements of the preverbal adjunct to intervene between the head of the adjunct and the modified verb. The same can be observed for BCS, cf. (29a), and Polish, cf. (29b).[12]

(28) a. Prošle godine je mnogo više od Želimira radila samo Branka. BCS
last year is much more from Želimir worked only Branka
'Last year, only Branka worked much more than Želimir.'
b. $^{?}$W zeszłym roku dużo więcej niż Jarek pracowała tylko Katarzyna. Polish
in last year much more than Jarek worked only Katarzyna
'Last year, only Katarzyna worked much more than Jarek.'

It is worth emphasizing that some Slavic languages lack the edge effect also in NPs. This phenomenon has been noted by Dimitrova-Vulchnova & Giusti (1995:128) in passing for Bulgarian, cf. (30a) in contrast to German (30b). However, unlike the pan-Slavic absence of the edge effect for VP adjuncts, the absence of the edge effect for NPs is more restricted. Some Slavic languages exhibit an edge effect for adnominal attributes, others don't. So, Bosnian-Croatian-Serbian does not tolerate post-head items in adjuncts (the same holds for Czech and Slovene), cf. (30c), while Russian and Polish behave like Bulgarian, i.e. they do not impose the edge effect, cf. (30d,e).[13]

(30) a. [verni-jat (na žena si)] măž Bulgarian
[truthful-the to wife poss-refl] man
'the man truthful to his wife'

[12] Compared to Russian and Croatian/Serbian informants, Polish informants judged the examples with complements intervening between the head of the adjunct and the modified head as more marginal. There were no informants, however, which found the examples unacceptable. According to Polish informants, this is due to the more neutral word order with the subject in the preverbal and the adjunct in the postverbal position.
[13] There is no correlation between article-less Slavic languages and languages with articles (viz. Bulgarian and Macedonian) in this respect.

b.	der [stolze (*auf seine Frau)] Mann the [proud (of his wife)] man	German
c.	*[vjeran svojoj ženi] muž faithful his $wife_{DAT}$ man 'a man faithful to his wife'	BCS
d.	[vernyj svoej žene] muž faithful his $wife_{DAT}$ man 'a man faithful to his wife'	Russian
e.	[wierny swojej żonie] mąż faithful his $wife_{DAT}$ man 'a man faithful to his wife'	Polish

It is more difficult to test another property of OV vs. VO languages, viz. the *relative order of verbs* (main verb, auxiliaries, quasi-auxiliaries/modal verbs) in a simple clause. This is due to the fact that, first, a lot of Slavic languages either have a very restricted number of auxiliaries (Russian) or the auxiliaries in most cases appear in a clitic version (BCS, Czech, etc.) or as quasi-morphemes (Polish), and, second, a lot of Slavic languages lack modal verbs altogether. However, in those cases, where we can observe modal verbs or non-clitic auxiliaries, Slavic languages rather pattern with OV languages than with VO languages. This has been already shown for Polish in (6) above. Data from Russian and BCS strongly confirm this tendency, cf. (31) and (32).

(31)	a.	Zutra *pospremiti moramo* samo našu sobu. tomorrow clean-up $must_{1:PL}$ only our room 'Tomorrow, we have to clean up only our room.'	BCS
	b.	Zutra *moramo pospremiti* samo našu sobu. tomorrow $must_{1:PL}$ clean-up only our room 'Tomorrow, we have to clean up only our room.'	

(32)	a.	Zavtra *ubirat' budem* v Izmajlovskom parke. tomorrow clean-up $will_{1:PL}$ in Izmajlovo park 'Tomorrow, we will clean up Izmajlovo park.'	Russian
	b.	Zavtra *budem ubirat'* v Izmajlovskom parke. tomorrow $will_{1:PL}$ clean-up in Izmajlovo park 'Tomorrow, we will clean up Izmajlovo park.'	

As for *opacity/transparency of preverbal phrases*, we have seen for Russian that *wh*-fronted and topicalized material may escape preverbal objects. It is a well known fact that – with the exception of Bulgarian and Macedonian – all Slavic languages allow for Left Branch extraction (cf. Bošković 2005).[14] The preferred word order for LBE constructions with discontinu-

[14] The Bulgarian and Macedonian exception, of course, calls for an explanation. We won't give a satisfactory solution for this problem. Bošković (2005) attributes this property to the fact that Bulgarian and Macedonian, in contrast to other Slavic languages, are article languages and therefore project a D-layer on top of the NP making the constituent opaque for extraction.

ous objects is that with the remnant of the extraction in the postverbal position. This is also true for Russian. The marginality of the construction notwithstanding, LBE from preverbal objects is grammatical in BCS and Polish, too, cf. (33)

(33) a. Koju$_i$ Petar [-$_i$ knjigu] *daje* svojoj ženi? BCS
which$_i$ Petar [-$_i$ book] *gives* his wife
'Which book is Petar giving to his wife?'
b. Jaki$_i$ Jarek [-$_i$ samochód] *kupił* swojej żonie?
which$_i$ Jarek [-$_i$ car] *bought* his wife
'Which car did Jarek buy his wife?'

The last set of data concerns the *(in)variable order of interrogatives* (wh-*phrases*). This issue is empirically controversial. For Bulgarian, it has been claimed that superiority is obeyed trivially, since *wh*-phrases seem to form a compact cluster, with no intervening items between *wh*-phrases. These facts led Rudin (1988) to propose two types of languages with multiply fronted *wh*-phrases: In the first one (e.g. in Bulgarian and Romanian), all *wh*-phrases move to Spec-CP as a single constituent, in the second one (Serbo-Croatian/BCS, Polish and Czech), only one *wh*-phrase moves to Spec-CP and the others adjoin to the projection immediately below. For the second type of languages, it has been claimed that superiority does not play any role.
As we have seen for Czech in (15) above, this is true, at least in the case of inanimate objects. Meyer (2004) carried out extensive controlled acceptability studies employing the experimental paradigm of Magnitude Estimation, which show superiority-like effects for those cases where the object is animate in Czech.[15] For Polish, he observes the same behaviour with no superiority for inanimate objects, cf. (34).

(34) a. Kto co przyniesie? Polish
who$_{NOM}$ what$_{ACC}$ bring$_{PFV}$
'Who will bring what?'
b. Co kto przyniesie?
what$_{ACC}$ who$_{NOM}$ bring$_{PFV}$

For BCS, no superiority holds whatsoever – at least in root clauses, cf. (35). In BCS, this is also reported for animate objects (cf. Bošković 1997, 1998 for further discussion).
(35) a. Ko je koga vidio? BCS
who$_{NOM}$ is whom$_{ACC}$ seen
'Who has seen whom?'

[15] Magnitude estimation (just like questionnaire studies or neurolinguistic on-line methods) measures overall *acceptability* reactions. Acceptability is nourished both by grammatical *wellformedness* as well as by *ease* of processing or *contextual* adequacy (e.g. information structuring). Even a grammatically wellformed construction may be judged less acceptable than another variant, just for *processing reasons*. Even if Superiority is not at stake for (ii) in German, the fronted *wh*-item must be construed with it trace *across* another *wh*-item. This is a processing difficulty that may result in judging (ii) slightly less acceptable than (i), cf. Haider (2004) for details.

i. Wer$_i$ hat e$_i$ *was* bestellt?	ii. Was$_i$ hat *wer* e$_i$ bestellt?
who has what ordered	what has who ordered

b. Koga je ko vidio?
whom$_{ACC}$ is who$_{NOM}$ seen

In Russian, the situation is more complicated. It has been claimed in the literature (cf. Stepanov 1998) that there are no superiority effects, whatsoever, except of the sequence *čto* 'what' > *kto* 'who'. Stepanov (1998) attributes this restriction to a phonetic constraint. Meyer (2004) convincingly argues against such a constraint. Again, he presents results of a controlled acceptability study which point into the direction that the *object* > *subject* order is significantly degraded compared to the strongly preferred *subject* > *object* order. He didn't find any difference between the sequences *čto* 'what' > *kto* 'who' and *kogo* 'whom' > *kto* 'who' (contra Stepanov 1998). However, violations of alleged Superiority in Russian are judged significantly less deviant compared to ungrammatical extractions out of embedded *čto*-'that'-clauses (non-subjunctive complement clauses).
This prompted Meyer (2004) to refer to these data as 'superiority effects' rather than violations of Superiority proper. We therefore labelled example (36b) with question marks and not with a star. Whatever the source of the deviance of *object* > *subject* orders with interrogatives in Russian might be, it does not have the strict status of ungrammaticality that Superiority violations in VO languages have.

(36) a. Kto čto porekomendoval komissii. Russian
who$_{NOM}$ what$_{ACC}$ recommended committee$_{DAT}$
'Who recommended what to the committee.'
b. ??Čto kto porekomendoval komissii.
what$_{ACC}$ who$_{NOM}$ recommended committee$_{DAT}$

In this section, we have adduced cross-linguistic data in order to show that Slavic languages differ systematically from regular VO languages like English, Scandinavian or Romance languages with respect to relevant properties. In sum, the data clearly militate against a classification of Slavic languages as (exceptional specimen of) VO languages.
Some areas – e.g. the split in the Slavic language family with respect to edge effects in NPs (as an indication of the T3 type of N-projections for those languages that lack the edge effect within NPs) or the factors behind contested or attested superiority-like effects in some Slavic languages – deserve further investigations.

5. Summary & outlook

For modern grammar theory, Slavic languages have been a constant embarrassment. They have been syntactically categorised as SVO in spite of their highly exceptional VO behaviour. In the two well-analyzed Indo-European language families, namely the Germanic and the Romance family, there is no VO language that would admit any of the typical syntactic properties of Slavic languages. The so-called word-order freedom is completely alien to VO languages. VO languages respect the edge effect, Slavic languages don't. VO languages impose a strict order on the verb, auxiliaries and quasi-auxiliaries in a clause, Slavic languages don't. VO languages impose 'traffic rules' for fronting interrogatives that are not effective in Slavic

languages, and so on. Given this state of affairs, grammar theory appears to be at a loss with Slavic languages.

This paper proposes a novel account. Slavic languages are not *exceptional* VO languages; they are *regular* T3 languages. The fact that VO patterns are a proper subset of T3 patterns explains why it was possible to misidentify these languages as VO for quite a long time.

This paper briefly explicates several characteristic properties of T3 languages and shows how Slavic languages match these properties. If the reassessment of the syntactic type of Slavic languages that is briefly outlined in this paper turns out to be basically correct, Slavic clause structure will cease to be an embarrassment for grammar theory. More importantly, the grammar theory that distinguishes OV, VO, and T3 as siblings under an overarching unique setting provides novel tools for exploring Slavic syntax in a more straightforward manner, without constantly stumbling across apparent exceptions.

In this framework, Slavic grammars do not look like bizarre specimens of grammar settings anymore. They turn out as representative of a grammar type that is as general and wide-spread as the OV and the VO type.

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