Time Computation
In Tenseless Languages

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ABSTRACT

In the Minimalist Program (1995), Chomsky gets rid of the Agreement projection and argues that Tense and Agreement can be assimilated universally. Tasks that were previously thought to be responsibility of the Agreement node are reassigned to Tense and other heads.

Serbo-Croat data contradicts the above theory showing that not only does this language lack a Tense projection, but it also lacks a Tense marker, allowing a manipulation and interpretation of its predicate forms. Further investigation shows that the entire Slavic language group, as well as some African and some Arabic languages display the same property. A Tense morpheme is absent from all of them and they heavily rely on Aspect in the computation of the time of any given action. Apart from Slavic languages, a link between Tense and Aspect is evident in Spanish and Latin as well.

Aspectual opposition is not powerful enough to express all the various "time frames" that a language needs and that are, for example, available in English. To overcome this problem, Slavic languages introduce Agreement into the "time" computation. Introducing two different sets of Person and Number markers ensures even greater variety.

Since the Tense head is absent from Serbo-Croat, Nominative Case assignment is performed by Agreement. This phenomenon is also characteristic for Bulgarian (and possibly the entire Slavic group, as well as some unrelated languages, like Portuguese and Galician). Consequently, Serbo-Croat does not allow Exceptional Case Marking but instead inflects its infinitives for Person and Number. Surprisingly, the absence of a Tense marker does not imply the absence of the [Tense] feature as all Tenseless languages seem to be perfectly capable of communicating the time and duration of any given action. Thus, I have also found that the [Tense] feature does not have to be morphologically realised, although all languages invariably seem to display Aspect morphology.

To account for the properties of both Tenseless and Tensed languages, I provide the evidence for the argument that languages universally project Infl and that both [Asp] and [T] features count as its intrinsic categorial features, in order to survive until LF. We also know that this projection must be specified for a strong [N] feature that forces overt subject raising, and that it is not specified for a strong [V] feature, as the main verb does not leave the VP until LF. In languages that do have a Tense marker, like in English, the [Tense] feature is checked at LF by the Tense marker. In languages that do not have a Tense marker, like Serbo-Croat, the [Tense] feature gets checked at LF in an alternative way.

A number of smaller but related issues are also handled on the way, particularly PRO distribution. I argues that PRO is assigned null Case if and only if it is controlled (by subject, object or arbitrarily) and that PRO acquires the null Case from its controller, not from the Infinitive. Contrary to Bošković's (1996) proposals, uninflected Infinitives can not assign any Case in any language.

I INTRODUCTION

1) Theoretical background
2) Aim of the thesis
3) Organisation of the thesis
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1) Theoretical background

1.1. On Agreement and Tense

In The Minimalist Program (1995), Chomsky argues for universal assimilation of Agreement with the Tense projection. He claims that the only evidence that can ever be seen for the existence of the Agreement projection is overt raising of certain lexical items, specified for phi-features. When no overt raising is evident, there is no need to assume the Agreement projection. In other words, the Agreement node exists only when Agreement is strong. When Agreement is weak, PF considerations do not give reason for it to be present at all, and LF considerations do not seem relevant. From this point of view, Agreement is nothing more than an indication of a position which has to be filled immediately and overtly.

When it is strong, when it projects, Agreement provides a position for Tense or verb raising (by adjunction) and DP raising (by substitution), so there is evidence that it appears in the numeration. It also creates a structural configuration for checking of the Case, T- (Tense-), V- (Verb-), DP/NP- (Determiner/noun) and phi-features (ϕ-features).

Chomsky shows that all the necessary syntactic operations can still be performed and preserved by assimilating the Agreement projection with Tense. This is done by keeping the intrinsic[1] properties of Tense and by assigning it additional non-intrinsic features of the Agreement node.

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[1] Chomsky (1995), page 231, takes intrinsic features of a lexical item (LI) to be those "…listed explicitly in the lexical entry or strictly determined by properties so listed…" Features of a lexical item are either intrinsic or optional. Optional features are understood to be those that are added to LI once it enters the numeration. "… In the case of *airplane*, the intrinsic features include the categorial feature [nominal], the person feature [3 person], and the gender feature [-human]. Its optional properties include the non-categorial features of number and Case…"

Case[2] is already a property of Tense and the main verb (MV) and it makes more sense to assign it to Tense than to Agreement. The T-feature is already intrinsic to Tense[3]. The V-feature and the DP/NP-feature are non-intrinsic to both Tense and Agreement; thus it makes no difference which of the two projections they are assigned to. Tense does not require a Specifier, but it can be assigned a Specifier if an optional strong DP/NP feature is added that is deleted and erased when checked by DP/NP in [Spec, T].

The situation is only slightly more complicated when it comes to phi-features. If lexical items are assigned phi-features as they are drawn from the lexicon, then the Agreement projection consists only of strong features that force overt raising. In other words, Agreement can never attract covert raising. But regardless of whether Agreement is or is not specified for phi-features, Chomsky argues that Tense is also a lexical item and, as such, it can also be optionally assigned phi-features as it is drawn from the lexicon (as well as nouns, verbs and adjectives). When assigned to nouns, phi-features are +Interpretable, but when optionally added to a predicate as it is selected from the lexicon, they are always –Interpretable, being non-intrinsic and non-categorial to Tense. As such, they would have to be deleted before LF. This means that, whenever present on Tense, phi-features would also always attract overt movement, and we arrive at the same end result.

The final conclusion regarding this matter made in The Minimalist Program (1995) is that languages universally project Tense, which is responsible for various syntactic operations, including those previously carried out by the Agreement Head, which is now universally assimilated with Tense.[4]

1.2. On features and checking

Among the features that appear in lexical entries, Chomsky distinguishes between *formal* features that are accessible in the course of the computation and others that are not. Each lexical entry contains *phonological, semantic* and *formal* features. Lexical items are either *substantive* (N, V, Adj,) or *functional* (T, C, Det,) categories. Formal features of a lexical item are either *intrinsic* to it (footnote 1) or *optional* (added as the lexical item enters the numeration). Features can be divided into *categorial, phi–*features, *Case* and *strong categorial* features.

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[2] Chomsky (1995), page 351 states:
"... The function of Agr is to provide a structural configuration in which features can be checked: Case and phi-features, and categorial features ([V-] and [T-] by adjunction, [D-] by substitution). The Case assigning feature is intrinsic to the heads (V,T) that raise to Agr for checking of DP in [Spec, Agr], so there is no reason to assign it to Agr as well..."
[3] [T] is the intrinsic categorial feature of Tense, just like [V] is the intrinsic categorial feature of a verb. [N]/[nominal] is an intrinsic categorial feature of nouns, etc.
[4] Chomsky (1995), page 378: "... Of the functional categories we have considered, only T, C, and D remain. Strong features, which play a considerable role in overt manifestation and language variation, are narrowly limited in distribution. We have seen no reason to suppose that N or V, the basic substantive categories, have strong features. The strength property can be restricted, perhaps, to the non-substantive elements T and v that head the major projections within the clause and to complementizers that serve as mood-force indicators..."

They are either Interpretable or non-Interpretable. +Interpretable features (categorial features and phi-features of nouns) have semantic content and must survive by LF, even if checked[5]. Those that do not are -Interpretable features and must be checked and eliminated before LF.

Chomsky (1995, page 278), explains the idea of Interpretability in a more formal way:
If feature F is a feature of the checking domain[6] (the checked), if K is the target (the checker) and F' is the sublabel F' of K, then
F' is always -Interpretable (strength of a feature, affixal feature, the Case assigning feature of T and V, phi-features of verbs and adjectives). The target does have Interpretable features, like categorial features, but these never enter into checking relations, and
F in the checking domain can be a +Interpretable feature, including categorial and phi-features.

Formal morphological features such as Agreement, Case inflection, etc, may vary in their relative strength, being broadly either weak or strong. All such features are purely formal and must be eliminated *at least* by LF. The strength of a formal feature is a matter of language variation. If F is strong, then F is a feature of non-substantive category and F is checked by a categorial feature. It follows that nouns and main verbs do not have strong features. Any strong feature forces an overt raising and induces cyclicity (it cannot be passed by an element that is able to check it and later be checked by another element – a Relativized Minimality violation). Chomsky allows only the functional categories to have strong features, which are checked, by categorial features, through raising of categories.

A strong feature always calls for a certain category in its checking domain (not, say, Case or phi-features). A strong feature also triggers a rule that eliminates it. Strong features must be eliminated by Spell-Out, as, if not eliminated by this point, they would appear at PF and would constitute uninterpretable (illegitimate) elements at this interface. Weak features are not visible at PF and so need not be eliminated by Spell-Out.

A checked feature is deleted whenever possible (invisible at LF, but accessible to computation) and a deleted feature is erased whenever possible (eliminated entirely). Features of a target are always -Interpretable and the Checking theory deletes them without exception and typically erases them. +Interpretable features cannot delete and remain visible at LF, whether they are checked or not (phi-features of nouns). This means that only -Interpretable features can be erased.[7]

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[5] According to Chomsky (1995), formal features may be strong. A strong feature forces an overt raising of a certain category into its checking domain in order for the categorial feature of the raised category to check the strong feature that forced the movement. A checked feature is then eliminated, unless it has a semantic content (it is +Interpretable) and has to be present at LF (in which case it survives until LF, even after being checked.

[6] There are only two possible structures (position of the 'checker' and the 'checked' relative to each other) that qualify as checking domains: the Specifier-Head checking configuration and the Head Adjunction checking configuration.

[7] Chomsky (1995), page 280:
"...Continuing to understand 'deleted' as 'invisible at LF but accessible to the computation', we now reformulate the operations of checking and deletions as in (52).

The obligatory overt raising of subject DPs can be explained if certain DP features are strong, hence in need of checking by Spell-Out. In fact, Chomsky suggests that it is the strong DP-feature specification on T, which forces overt pre-Spell-Out raising to take place in English and French. He reduces the Extended Projection Principle (EPP)[8] to the strength of DP-features on Tense – if they are strong, overt raising is forced.

Feature checking is regulated by the Economy Principles. Movement only takes place when forced; and it is overt, violating Procrastinate[9], only when that is required for convergence[10]. In Chomsky (1995), the Last Resort Principle is defined as: "Move F raises F to the target K if and only if F enters into a checking relation with a sublabel of K."

Each feature is checked by one category.

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(52) a. A checked feature is deleted when possible.

      b. Deleted α is erased when possible.

'Erasure' is a 'stronger form' of deletion, eliminating the element entirely so that it is inaccessible to any operation, not just to interpretability at LF.

'Possibility' in (52) is to be understood relative to other principles. Thus, deletion is 'impossible' if it violates principles of UG... Interpretable features cannot delete even if checked. The question of erasure, then, arises only for a -Interpretable feature F, which is erased by (52b) unless that operation is barred by some property P of F..."

[8] Within Government and Binding Theory (GB), the requirement that every sentence must have its subject is known as the Extended Projection Principle (EPP). In other words. [Spec, IP] is obligatory. This principle is specified through the phrase structure rules of GB as: S → NP – AUX – VP (where S = sentence).

[9] Chomsky (1995) claims that all movement occurs only for reasons of feature checking, hence that whenever movement is observed to take place (or when covert LF-movement is assumed to take place) this must be for feature-checking and there must be both some identifiable feature type to be checked. and some functional projection into whose Spec the element may move for feature-checking. Procrastinate has for effect that movement operations should be delayed as late as possible, until the post-Spell-Out LF portion of the derivation where movement is economically 'cheaper'/less costly. The principle of Last Resort dictates that any particular step in a derivation is only legitimate if it is necessary for convergence.

[10] A derivation *converges* if it yields a legitimate expression (at a particular interface level) and *crashes* if it does not. An expression may possibly converge at PF but crash at LF (or vice versa). It is only when a derivation converges at both levels that it may be taken to be fully well-formed.

2) Aim of the thesis

If it is true that the Agreement projection is universally redundant and that the Tense node is an absolute and universal necessity, then Serbo-Croat (SC) and some other languages present a serious problem for the Minimalist Program. The position of the Auxiliary verb (AUX), occasional long main verb (MV) movement, subject raising from [Spec, VP] to a higher Specifier, etc, are all signs that reveal a position above VP in SC. However, this projection does not seem to be the Tense projection.

Most of this thesis is devoted to showing that Serbo-Croat lacks Tense morphology (overt or non-overt) and that various predicate forms are composed of the verbs marked for Agreement and Aspect *only*. The Aspect and Agreement features interact in different ways resulting in a variety of possible combinations, each of which is then used to help the speakers locate the actions in time.

Further research into these phenomena has resulted in the realisation that tenseless languages rely on Aspect in Tense interpretation. This is true for all tenseless languages that I have come across so far – not only those belonging to the Slavonic language group, but also those that do not belong to the Indo-European language family, like Yoruba and Igbo, Arabic, Chinese, and, possibly many others.

Thus, the Aspectual characteristics of any given predicate are the focus of our investigation. We discover that the ancestor of all Indo-European languages (including English) also lacked Tense morphology and its earliest recorded version used Aspect to communicate Tense. Some members of this language family, like English, later developed their own Tense morphemes, while some others, like Serbo-Croat, did not. The great emphasis was, and still is, put on the Aspectual properties of any given action. In a simplest case, an action marked for perfective Aspect is considered completed and *therefore* past, while imperfective Aspect is taken as a signal that the action in question is non-completed (ongoing) and *therefore* non-past.

The perfective vs. imperfective Aspect opposition is somewhat limited in the sense that it only allows for the two possibilities: past or non-past (or possibly, future or non-future[11]). Today's tenseless languages have enriched their systems of Tenses by introducing Agreement into Tense marking, in an attempt to make it possible to make finer references to the time of a given action.

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[11] Comrie (1985), page 36, defines *absolute tense* as referring "to tenses which take the present moment as their deictic centre."... "There is thus a real sense in which taking the present moment as the deictic centre establishes the most basic tenses cross-linguistically, those in terms of which it is often easier to understand the deviations from absolute tense."... Given the present moment as deictic centre, the three absolute tenses are: present, past and future. Further (page 49), he claims that "while the general theory allows us a three-way distinction within absolute tense, many languages in fact have a basic two-way split, with either an opposition between past and non-past or between future and non-future."... In *relative tenses*, he claims (page 56), " the reference point for location of a situation is some point in time given by the context, not necessarily the present moment."

A closer look into tenseless languages reveals another extraordinary fact: abstract features do not have to be morphologically realised. Thus, although these languages lack the Tense Head, and therefore the Tense projection, they all, without exception, have, and check, the [Tense] feature at LF. In other words, despite the fact that Tense is morphologically absent from tenseless languages, semantically, Tense information is still communicated. A Tense-feature is present and checked at LF, but not by independent Tense morphemes, but *compositionally*, by Aspect and Agreement verbal inflection.

The claim that tenseless languages do not project Tense raises the obvious question of where in the structure is the Tense feature located. This problem is dealt with in the Chapter V, Section 4, where I provide arguments for universal projection of the Infl node[12].

I also found that none of the Slavic languages has a separate form for future, but actions are viewed as past or non-past only, where the non-past includes both present and future.

Consequently, we are left with a problem of explaining how Serbo-Croat carries out the tasks that are generally assumed to be universally performed by the Tense Head, mainly Tense interpretation and Nominative Case assignment. Tasks which are assumed to be performed by the Tense Head (Chomsky, 1995) are, in Serbo-Croat, either delegated to other Heads, or dealt with in some other way. It will be argued in this thesis that Nominative Case is assigned by certain Agreement markers.

I will also provide evidence that the Case-assigning property of Agreement Heads is not SC-specific. Portuguese and Bulgarian examples reveal the same phenomenon, though an independent Tense marker does exist in Portuguese.

I also question the way that features are thought to be checked (on a one-to-one basis), and provide Serbo-Croat evidence that there is an alternative way – compositional feature checking.

The very fact that tenseless languages do exist contradicts one of the Chomsky's (1995) strongest claims that Tense is universally projected. If Serbo-Croat does not project Tense, then not only the projection above VP must be identified, but also the differences between the English type languages, which have invented an independent Tense marker, and Serbo-Croat type languages that have not, must somehow be explained. Evidence suggests that the Agreement projection does not exist in Serbo-Croat either, although Agreement morphology is undoubtedly present. An attempt to prove the projection of Aspect also fails.

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[12] Pollock (1989) argues that differences between French, which allows the inflected verb to sometimes precede the subject, and English, which does not, can be accounted for by decomposing the Infl into two separate functional heads, each with its own projection, Agr and T. Since then, Government and binding Theory reinterprets IP as AgrP and AgrP dominates T. Chomsky (1995) gets rid of the Agr projection altogether and claims that languages universally project only TP. This thesis, however, attempts to show that neither of the above proposals can satisfactorily account for both tensed and tenseless languages and argues for the universal projection of the Infl node.

Finally, I postulate the Infl projection and argue that [T] and [Asp] features must count as its intrinsic categorial features. This analysis successfully accommodates all language types into one theory.

A smaller but related issue of PRO distribution is also tackled along the way.

As a matter for further research, it would be interesting to compare the Slavonic group of languages with the other 11 language groups from the Indo-European family. It remains to be investigated why it is that, although they all have the same ancestor, some of these language groups have developed a Tense marker and some have not. Possibly even more revealing would be a comparison of the entire Indo-European language family with the rest of the world language families.

3) Organisation of the thesis

3.1. Chapter I: Introduction

This Chapter contains:
a brief outline of the current MP assumptions (Chomsky, 1995) that are being challenged,
a short summary of the ideas that are being proposed,
the structure and the plan of the thesis, explaining what is covered in each Chapter,
a historical review of the relevant phonological, morphological and syntactic facts from the Proto-Indo-European language and
a brief description of the relevant properties of modern Serbo-Croat.

3.2. Chapter II: Tense

This Chapter:
shows that Serbo-Croat lacks Tense morphology and that tenseless languages exist and determines what factors are involved in Serbo-Croat Tense marking.

3.3. Chapter III: Aspect

This Chapter:
follows Aspectual properties of the language from its ancestor, Proto-Indo-European to the modern Slavic languages,
shows that Aspect in tenseless languages is involved in Tense marking and
provides the evidence for this from both Slavic and non-Slavic languages.

3.4 Chapter IV: Agreement

This Chapter:
shows the tendency of Serbo-Croat Agreement features to form clusters,
proves that Agreement in Slavic and some non-Slavic languages is involved in Nominative Case assignment and
provides a new account of PRO distribution.

3.5. Chapter V: Clausal structure in SC

This Chapter:
deals with the clausal structure of Serbo-Croat and
discusses compositional feature checking.

3.6. Chapter VI: Conclusion

This Chapter:
gives the summary of the preceding sections.

3.7. Chapter VII: Appendix

This Chapter contains:
a more detailed overview of phonological, morphological and syntactic characteristics of
Serbo-Croat at different stages of its development.

4) Relevant historical information[13]

4.1. Location of Serbo-Croat in the Indo-European family

Proto-Slavonic was never recorded, but had to be reconstructed by comparing the forms from the Indo-European family of languages which all have Proto-Indo-European as their common ancestor. Schenker (1993) lists them as follows:

Indic (Vedic, classical Sanscrit, many modern Indian languages),
Iranian (Avestan, Persian, northern Iranian languages),
Tocharian,
Anatolian (Hittite and some languages of Asia Minor),
Armenian,
Greek,
Albanian,
Italic (including classical Latin),
Celtic,
Germanic (medieval Gothic, Old and Middle High German and Old Norse),
Baltic (Lithuanian, Latvian, Old Prussian) and
Slavic.

He estimates that the disintegration of dialectally uniform Early Proto-Indo-European into dialectally diversified Late Proto-Indo-European and formation of individual language groups took roughly four millennia (ninth century AD). Within the Proto-Indo-European language family, Serbo-Croat is placed in the Slavic language group. On the basis of the language changes and on the basis of exactly what languages were affected by them, the history of the Slavic language group is divided into these three periods:[14]

Balto-Slavonic (period in which changes affected Slavonic and Baltic),
Early Proto-Slavonic (when changes were noted only in Slavonic languages),
Late Proto-Slavonic (the appearance of the first dialects within Proto-Slavonic).

At the end of the Late Proto-Slavonic period, the individual Slavic languages were roughly formed. According to what is known today, there are thirteen living and two extinct Slavonic languages, which originate from Proto-Slavonic.

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[13] Consulted Schenker (1993).

[14] Schenker (1993), page 62:"...it is convenient to subdivide Proto-Indo-European into dialectally diversified Late Proto-Indo-European and dialectally uniform Early Proto-Indo-European... The similarities between Baltic and Slavonic have long been noted...Since Baltic and Slavonic were at the tail end of the process of the disintegration of the Indo-European speech community, what is termed *Balto-Slavonic* is, in fact the very latest stage of Late Proto-Indo-European. Once separated from each other, Baltic and Slavonic (or, at least, some of their dialects) continued to exist side by side and underwent a period of parallel developments and of outright linguistic borrowing..."

The contrasts and similarities between them are often blurred to the extent that the difference between a dialect and an autonomous language is not always obvious.

Table 1.1.

	Eastern	[Old Church Slavonic, OCS] Bulgarian Macedonian
SOUTH		
	Western	Serbo-Croat Slovene
	Czecho-Slovak	Czech Slovak
WEST	Sorbian	Upper Sorbian Lower Sorbian
	Lechitic	Polish Cassubian [Polabian]
EAST		Russian Ukrainian Belorussian [15]

4.2. Relevant phonological facts

The reconstructed system of Proto-Indo-European is quite strange for today's standards in the sense that it is rather large.[16] Here, I concentrate on only a small portion of the relevant phonological data concerning Proto-Indo-European and Proto-Slavonic. If more information is needed, please refer to the examples and tables given in Chapter VII, Section 1, page 161.

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[15] Classification of the Slavonic languages as it appears in Schenker (1993),.page 60.

[16] Schenker (1993), page 63, claims that the Proto-Indo-European phonemic system consisted of 5 short and 5 long vovels, 1 spirant (s), 3 unaspirated tense (unvoiced) stops (p, t, k). 3 unaspirated lax (voiced) stops (b, d, g), 3 aspirated (neutral to tenseness) stops (bh, dh, gh), 3 plain velar stops (k, g, gh), 3 palatalized stops (k', g', g'h), 3 labialized stops (kw, gw, gwh), 4 short and 4 long sonants (m, n, r, l). It also had a potential for 36 short and long dipthongs and, after the 4 sonants developed epenthetic high vovels in the Balto-Slavonic period, this provided a potential for another 16 diphtongs.

It is not of great importance for the issues of syntax and will not be discussed, but some phonological properties of Proto-Indo-European and Proto-Slavonic do seem to be relevant. The arguments presented in this paper all depend on successful analysis of complicated and rather confusing data: Slavonic words are morphologically complex, consisting of two, or of many more, distinct morphemes.

In addition, Slavonic languages each have an exceptionally large inflectional system. Sounds that end up next to each other, when various morphemes are put together, affect each other and enter various phonological processes. The resulting phonological change may make the boundary between morphemes less obvious or even invisible. Without knowing the phonological tendencies of these languages and without being able to recognise the resulting changes, it is almost impossible to examine these complex units and split them into their components correctly. The changes affected both vowels and consonants. Some of them were triggered by morpheme combining, but some of them were the result of a larger phonological alteration that introduced loss or alternation of certain sounds regardless of their environment. Although some of these transformations started more than four millennia ago, modern Serbo-Croat phonology shows that a number of them are still ongoing.

The description of the phonological processes that I have had to take into consideration during the research is omitted from the main text of the thesis, due to its length and complexity. I have, however, included a detailed account of all the relevant historical phonological facts in a rather large section in the Appendix. (Chapter VII).

4.3. Relevant morphological and syntactic facts

Research on the Proto-Indo-European and Proto-Slavonic syntax and morphology was mainly concerned with the reconstruction of grammatical categories and, to some extent, with their occurrence in sentences.

Except for some conjunctions and particles which were simple, Proto-Slavonic words were complex (analysable into two or more discrete morphemes). Adverbs were uninflected. Other complex words which were inflected include nominals (nouns, pronouns, adjectives and numerals) and verbs.

Inflected words were composed of stems and inflection (nominal or verbal). Obligatory inflection marked Case, Person, Number, Gender and Infinitive. Verbs could also have inflection which marked Aspect or Mood (i.e. -ea- was the Imperfect suffix, etc). Some inflectional categories were expressed through an independent word (i.e. Auxiliary verb). Inflection was lexical (marking negative, perfective, imperfective, diminutive, etc) or grammatical (forming adjectives from nouns. etc). It is believed that Tense morphology existed as well. I did not have enough historical data to verify to what extent this is true and I do have some doubts, bearing in mind that a Tense marker is also assumed for the modern Slavic languages, one of the claims that I am disputing in this thesis.

4.3.1. Case

A verb, noun or a preposition required a noun in a particular Case. Intransitive verbs inherently required an absence of a direct object. The direct object, indirect object and subject were distinguished through their Case markers.

Nominative was the Case of the subject and the predicate complement.

Accusative was the Case of the direct object and some temporal expressions.

Genitive expressed subordination in a sequence of two nouns or a numeral and a noun, and sometimes it replaced Accusative as the direct object Case, it also denoted quantification as a direct object of verbs, etc.

Dative was a directional Case and thus denoted the indirect object. It also functioned as the Case of the agent/beneficiary in impersonal constructions and as the subject of the Infinitive in 'the Dative with Infinitive' constructions.

Locative denoted location in time and space.

Instrumental signalled the accessory to the performance of an action, an instrument, means or manner of performance. In prepositional phrases, the noun Case depended on the preposition.[17]

4.3.2. Impersonal constructions

Proto-Slavonic also had constructions that always contained the least marked finite form: 3rd sing neuter, and their subject was obligatorily dropped. This was done in order to neutralise the Person, Number and Gender categories and give the subject of the clause as general a reference as possible (involuntary or natural phenomenon)[18]:

(1a) *Ne hъt'etъ se.   (1b) *Grъmit   (1c) *Mъnitъ se.
     not want-3sing reflexive   *to-make-thunder-3sing*   *Seem-3sing reflexive*
     (One does not feel like it.)   (There is thunder.)   (It seems.)

4.3.3. Pro

According to Schenker (1993, page 108), Proto-Slavonic was a pro-drop language (2a) in personal constructions (constructions whose inflection contained the category of Person). An overt subject pronoun was reserved for emphasis (2b).

(2a) *Vĕmъ   *Vĕsi
     (I know.)   (Thou knowest)

(2b) *Azъ vĕmъ   *Ty vĕsi
     (I know)   (**Thou** knowest)

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[17] Reconstructed Proto-Slavonic examples are given in Chapter VII, Section 2.2., page 169.
[18] Reconstructed Proto-Slavonic examples, by Schenker (1993), page107.

4.3.4. Thematic and athematic verbs[19]

Thematic verbs:

Most Proto-Slavonic verbs did not add the Person and Number markers directly to the root but to the stem, which consisted of the root and a suffix. The suffix determined the inflection of that particular verb. Such verbs were called thematic verbs. Suffixes that assigned the stem to a particular inflectional pattern were called thematic suffixes; that is, verb stems were grouped according to their thematic suffix. Verbs from the same group (same thematic suffix) obeyed the same pattern when inflected. Most Proto-Indo-European thematic suffixes were lost in Proto-Slavonic or they blended with the inflection.

Athematic verbs:

Verbs that added Person and Number markers directly to the root were called athematic. Schenker (1993) claims that both thematic and athematic verbs had different stems in Present Tense and related forms and in Infinitive and related forms, except for the athematic verb *jasti* 'to eat'. There were seven regular verb classes.

4.3.5. Conjugation

Proto-Indo-European distinguished several sets of Person endings. The so-called *Primary* Person endings (for convenience, I call them P1) were opposed to the *Secondary* Person endings (P2). It is important to note that these differences had nothing to do with Tense, and the evidence for this claim can be seen in the following facts:
The same set of Person endings was used for two or more distinct morphological finite verb forms. In the Indicative, the Person endings used in the Active Voice were different from those used in the Middle Voice, regardless of what Tense is being communicated. Moreover, some Person endings of the thematic conjugations were different from those of the athematic ones. Thus, in the Active Voice, the first and the second singular admitted three distinct endings; the third singular and plural distinguished two endings, while other persons and numbers displayed one ending only.

Table 1.2. Active Person endings of Proto-Indo-European:

	Primary (P1)		Secondary (P2)
	Athematic	Thematic	
1sing	-mi	-o	-m
2sing	-si	-ei (?)	-s
3sing	-ti		-t
3pl	-nti		-nt

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[19] Examples of both types of verbs are given in Chapter VII. Section 2.6.1., page 171.

4.3.6. Verbal categories

Voice

The semantic contrast between agent and patient was not so clear. It was reduced to the contrast between the structures containing reflexive and pure passive constructions. Those containing reflexive were those in which the distinction between the Passive and Active Voice was blurred, resulting in a kind of Middle Voice that combined the Active and the Passive role, assigning them both to the subject (3).

The only way of distinguishing between the Active and Middle opposition was through a set of special inflectional endings. These special endings were eventually lost in Proto-Slavonic. The semantic distinction between the Active and the Middle in Proto-Slavonic was expressed through a new contrast between two genera: the non-reflexive and reflexive, the latter formally distinguished by the particle *se* (equivalent to English *myself, yourself,...*).

Active: the subject of an active sentence was an agent.

Middle: subject-oriented reflexive constructions neutralised the distinction between an agent and a patient by merging them and assigning them both to the subject, which appeared in the Nominative:

(3) *Žena   şe   spase.
    woman-Nom herself save
    (The woman saved herself.)[20]

Passive: the role of patient in a passive construction was assigned to the subject, which also appeared in the Nominative. The role of an agent was not linked to the subject and it could be specified by a separate constituent, though this was optional.

Proto Indo-European did not contrast Active with Passive.

Mood

Proto-Indo-European distinguished between the following four Moods: Indicative, Subjunctive, Optative and Imperative. The Subjunctive (or Conjunctive), known from Vedic Sanskrit, Greek, Latin and Celtic, expressed probability or expectation. Therefore, it was frequently interpreted as the Future Tense. Proto-Slavonic retained the Indicative mood only. It replaced the Subjunctive by the Conditional, in which the resultative participle (so-called the *l-participle*), combined with a particular form of the Auxiliary verb *to be*. The Optative, which occurred in Sanskrit, Greek, Latin and Germanic. expressed desire or potentiality. In Proto-Slavonic, it replaced the original Proto-Indo-European Imperative.

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[20] Reconstructed Proto-Slavonic example, by Schenker (1993), page 107.

Aspect

Aspectual meanings were inherent in the Proto-Indo-European Tenses, but Proto-Slavonic introduced a grammatical opposition of two Aspects: the perfective (completed action) and the unmarked imperfective, which became an obligatory category of the Slavonic verbs. The perfective Present assumed the function of the Future, leaving the imperfective Present as the only pure Present. Thus, Proto-Slavonic Present Tense forms referred either to the present or the future (non-past). Proto-Slavonic developed its own Perfect and Pluperfect, formed analytically of the l-participle and, respectively, the Present or the Aorist of the verb *to be* as an auxiliary. It invented the imperfective Future expressed by the Infinitive plus the Present Tense forms of the Auxiliary verbs *to be*, *to have*, *to want* and *to begin*. Unfortunately, Schenker (1993) gives no examples.

Tense forms

Schenker (1993) points out that the oldest reconstructed system of Proto-Indo-European Tenses included the Present, the Aorist and the Perfect. The action expressed in the Present Tense was not completed at the moment of speech. The Aorist viewed actions as completed. The Perfect emphasised the result of an action, thus linking the past (the action) and the moment of speech (the result). There were no more Tense forms. The future was originally expressed through the modalities of the Subjunctive or Optative.

Aspect was inherent to Proto-Indo-European verbs. The appearance of grammatical Aspect in Proto-Slavonic resulted in a new grammatical opposition of the two Aspects: a perfective verb denoted a completed action, while an unmarked imperfective verb signalled a non-completion. Specific Imperfect formations (emphasising non-completion of a past action) appeared for the first time in some Late Proto-Indo-European dialects. So did the Pluperfect, (an action that precedes the narrated event), and also the Future Tense, it is believed. Proto-Slavonic kept the three Persons of Proto-Indo-European.

The Present Tense: Depending on the Aspect of the verbal stem, the Proto-Slavonic Present Tense forms referred either to actions simultaneous with (imperfective Aspect) or following the moment of speech (perfective Aspect). Person and Number endings were derived from the Proto-Indo-European Primary endings. In the thematic verbs, they were added to stems extended by the Present Tense suffix.[21]

The Aorist: The aorist said nothing about the duration or result of an action, but signalled only that it was completed (perfective Aspect). Proto-Slavonic Aorist suffixes were derived from the Proto-Indo-European Secondary (second set) Person endings and were added to the Infinitive stem. Initially, Proto-Slavonic had three different Aorist formations. The first two, the Root (or simple) and Sigmatic Aorist, inherited from Proto-Indo-European, were eventually replaced by the third type which remained the only productive Aorist formation in Proto-Slavonic.[22]

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[21] A table of the Proto-Slavonic Present Tense forms, as they appear in Schenker (1993) is given in Chapter VII, Section 3.8.5.1., page 175.

[22] For more on these three types, please refer to Chapter VII, Section 3.8.5.2., page 175.

The Imperfect: Proto-Slavonic interpreted the Proto-Indo-European Imperfect as the Root Aorist. Thus, the original Imperfect had to be replaced by a new one. This new Proto-Slavonic Imperfect was used to signal a past action which was not completed, with a particular emphasis on its duration or repetition. As such, it could only be used with imperfective verbs. The inflection was added to the Infinitive stems, although some irregular verbs used the Present Tense stems. The oldest Imperfect forms were built on the Infinitive stems.[23]

Non-finite forms

The Proto-Slavonic non-finite forms were Infinitive, Supine, Participles and verbal nouns. The Infinitive and Supine were derived from Case forms of Proto-Indo-European deverbal nouns. Participles and verbal nouns combined the functions of verbs with those of adjectives and nouns respectively.[24]

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[23] Chapter VII, Section 2.8.5.3., page 178.
[24] Chapter VII, Section 2.8.6.. page 179.

5) Description of the relevant properties of modern Serbo-Croat

5.1. Serbo-Croat declarative clauses: word order and basic constituents

The word order in Serbo-Croat is, to a large extent, regulated by pragmatics. The basic word order in Serbo-Croat is SVO and it is used whenever all the arguments are known to the participants in conversation and the verb has unsurprising meaning, or whenever the arguments and predicate are all new in the discourse.

The basic tree structure consists of a VP, dominated by a higher projection. According to Chomsky (1995), this is a Tense projection[25]. For the moment, we shall agree with him, but I will be arguing later for the absence of a Tense Head and therefore a Tense projection in SC.
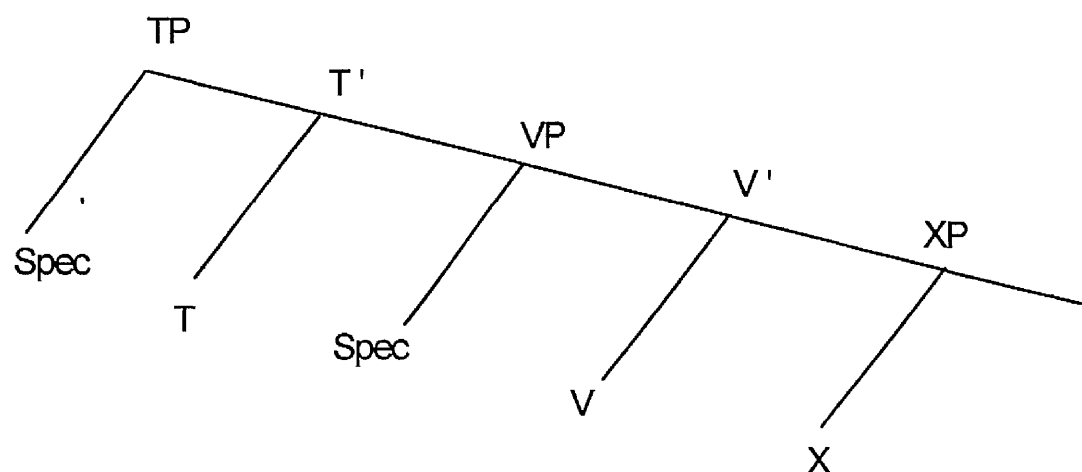
(4) Moja sestra   čita   knjige.
     my-Nom sister-Nom   *read-3sing*   *book-plural*
     (My sister reads books.)

(5) Neki čovjek   obija   auto.
     some-Nom man-Nom   *break-into-3sing*   *car-Acc*
     (A man is breaking into a car.)

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[25] Chomsky (1995), page 377, gives his final conclusions concerning Agreement and Tense: "... For the case of subject Agreement, these apparent functions of Agreement could be accommodated within the system just outlined by assimilating it with T: by assuming, that is, that as T is drawn from the lexicon for the numeration, it too is optionally assigned phi-features (as are nouns; and I have so far assumed, verbs and adjectives)... As matters stand here, it seems reasonable to conjecture that Agr does not exist and that phi-features of a predicate P, though -Interpretable, are like the Interpretable phi-features of nouns in that they are part of P in the numeration, added optionally as P is selected from the lexicon..."

5.1.1. Adverbs

Adverbs that modify the verb tend to precede it, while sentence adverbs usually follow it:
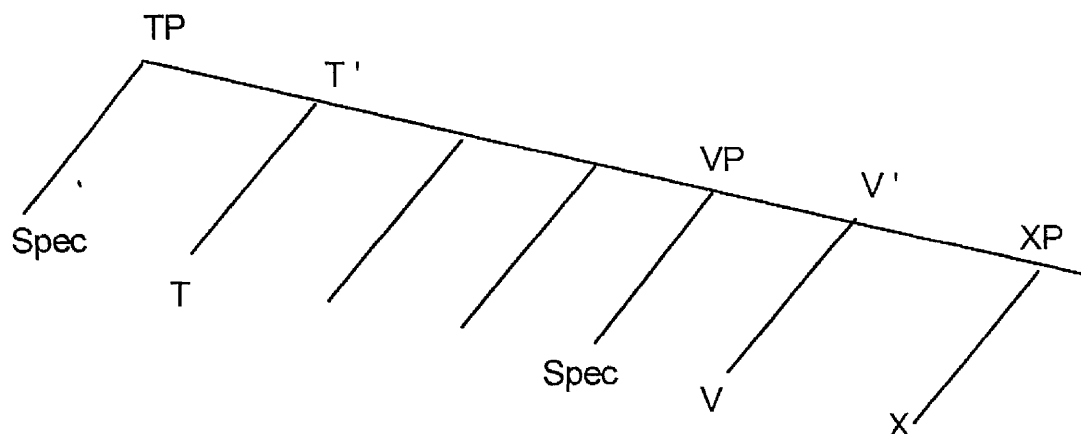
(6) Marija   je   **jasno**   vidjela   provalnika.
    Maria   has   clearly   seen   the burglar
    (Maria saw burglar clearly.)

(7)Marija   je   zaspala   **u kinu.**
   Maria   has   *fell asleep in cinema*
   (Maria fell asleep in the cinema.)

5.1.2. New information

A questioned constituent or any new information is generally placed sentence-finally:

(8a) **Who** reads books?
      Knjige   čita   **moja   sestra.**
      book-plur read-3sing my-Nom   sister-Nom
      (My sister reads books.)

(8b) **What** does your sister read?
      Moja   sestra   čita   **knjige.**
      my-Nom   sister-Nom read-3sing book-plur
      (My sister reads books.)

(8c) **What** does your sister **do** with the books?
      Moja   sestra   knjige   **čita.**
      my-Nom   sister-Nom book-plur   read-3sing
      (My sister reads books.)

5.1.3. Existential sentences

Despite the basic SVO order, subjects are often found post-verbally, usually in existential sentences. This probably has to do with the subject providing new or emphasised information. These sentences occur in two forms:

(9a) time/place + verb + subject Na stolu leži knjiga.
on table lies book.
(There is a book on the table.)

(9b) *to have* + subject U frižideru ima šunke.
in fridge has ham
(There is some ham in the fridge.)

Verbs in both the above cases can be replaced by the verb *biti* 'to be' and, in some dialects, only *biti* 'to be' is allowed:

(10a) Na stolu **je** knjiga.
on table is book.
(There is a book on the table.)

(10b) U frižideru **je** šunka.
in fridge is ham
(There is some ham in the fridge.)

5.1.4. Clitic placement

Serbo-Croat has a large group of so-called 'second position clitics', which, due to their phonological properties (no accent) can only appear in the clause-second position and must be preceded by overt linguistic material. The clitics can be preceded by more than one word only if the words in question form a constituent and thus take up one position only. However, even in these cases, the clitics frequently interfere with the constituent-internal structure, as they are often inserted after the first word of the constituent. For example, the following two sentences contain the clitic form of the verb *biti* 'to be', and they are both grammatical:

(11a) Moj posao **je** veoma naporan.
My job is-clitic very demanding
(My job is very demanding.)

(11b) Moj **je** posao veoma naporan.
My is-clitic job very demanding
(My job is very demanding.)

Various syntactic conditions regulate the choice of the appropriate form (full/clitic): whether the clause in question is introduced by a null subject (pro), whether the information contained in the verb is focussed or not, whether this verb is preceded by other linguistic material, etc.

5.2. Relevant phonological facts

Details of phonological processes that have or still are affecting Serbo-Croat are given in the Appendix (Chapter VII, Section 3, page 183). It should be consulted if some combinations of inflection and stems appear to yield an unusual result, having triggered a phonological transformation.

5.3. Relevant morphological facts

5.3.1. Thematic and athematic verbs

SC still makes a distinction between athematic (add Person and Number markers directly to the root) and thematic verbs (root extended by a thematic suffix) and keeps the opposition between the Present and Infinitive stems[26]. The Present and the Infinitive stems of some verbs are identical.

Thematic verbs There were seven regular verb classes in Proto-Slavonic, which Serbo-Croat reduced to four.[27]

Athematic verbs Recall that Proto-Slavonic had four athematic verbs and that all of them, except for *jasti* 'to eat', had different stems for the Present and related forms and for the Infinitive (*-ti*, Infinitive marker) and related forms: apart from the verb *biti* 'to be', they all became regular thematic verbs.

The verb *biti* 'to be' remains the only athematic verb in Modern Serbo-Croat. Its Present stem is *jes-* and its Infinitive stem (after removal of the Infinitive marker *-ti*) is *bi-*. This verb is unusual as it has a third stem *bude-*, also a Present stem, used in conditional clauses, Imperative, Gerunds and as an Auxiliary for the Future II.

Present stem 1, *jes-*, is imperfective.
Present stem 2, *bude-*, is perfective.
Infinitive stem, *bi-*, is bi-Aspectual.

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[26] Barić, Lončarić, Malić, Pavešić, Peti, Zečević and Znika (1995), page 234, state that the Infinitive stem is used for: the Infinitive, the Aorist, the Past Gerund, the Passive, the Imperfect of some verbs and the Imperative of some verbs. The Present stem, on the other hand, is used for the Present, the Present gerund, the Imperfect of most of the verbs, the Imperative of most of the verbs and the Passive of some verbs.

[27] Chapter VII, Section 2.6.1., pages 171-172.

5.3.2. Aspect

Serbo-Croat verbs are inherently marked for Aspect[28]. In addition to this, Serbo-Croat has an enormous inventory of Aspect prefixes, infixes and suffixes. An inherently imperfective verb can be transformed into a perfective verb through a perfective inflection and vice versa. This inflection rarely affects only the Aspectual properties of the verb in question; it almost always changes the lexical meaning as well. Thus, if the imperfective verb *pisati* 'to write' is added the perfective prefix *pod-*, this yields the perfective verb *potpisati* 'to sign'.

If one wanted to change this new perfective verb *potpisati* 'to sign' into an imperfective verb, one could simply drop the perfective prefix *pod-* and the result would be the original verb *pisati* 'to write'. But, in this way, the meaning of the verb would be affected: *potpisati* 'to sign' would be changed into *pisati* 'to write'. In order to preserve the lexical meaning of the perfective verb *potpisati* 'to sign' and still change its Aspect, its prefix has to remain, and the imperfective infix *-iv-* is introduced. The result is now the imperfective verb *potpisivati* 'to be signing'.

Things may get quite confusing at first sight, because of the large number of the Aspect affixes. Some other verb may choose a different imperfective infix. For example, the perfective verb *razbiti* 'to break' is made imperfective through the infix *–ija*. This yields *razbijati* 'to be breaking'. Exactly which suffix a verb would choose, its inflectional pattern, is determined by its thematic suffix.

5.4. Morphological composition of Serbo-Croat finite forms

Serbo-Croat finite forms agree with subjects in Person and Number. Compound forms (with AUX and the l-participle) also express Gender. The Future I and the Future II each have both a simple and a compound form, see Section 5.4.7., pages 29-30.

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[28] Stanojčic and Popović (1994), page 97, state that Aspect is used to mark the difference in the duration of an action and that Serbian verbs are divided into three large groups: imperfective (continuous) verbs, perfective (completed) verbs and bi-Aspectual verbs.

1) An imperfective (continuous) verb marks an unlimited action. They are further divided into two subgroups: permanent, for example; *šetati* (to walk), *jesti* (to eat), *sumnjati* (to doubt), *imati* (to have), etc; and repetitive, for example: *kucati* (to knock), *javljati se* (to keep in touch), etc.

2) A perfective (completed) verb marks an action of a limited duration. They are further divided into four subgroups: momentarily-completed, for example: *sesti* (to sit), *pasti* (to fall), *trepnuti* (to wink), etc: start-completed, for example: *zapevati* (to start singing), *zaplakati* (to start crying), etc; end-completed, for example: *popiti* (to drink up), *iskoristiti* (to use up), etc; and unspecified-completed, for example: *zagristi* (to bite), *zaigrati se* (to get carried away while playing), *poplakati* (to weep for a while and then stop), etc.

3) Bi-aspectial verbs are ambiguous in the sense that they could describe either continuous or completed action, and this ambiguity is resolved only within the context. Examples of bi-Aspectual verbs are: *čuti* (to hear), *videti* (to see), *telefonirati* (to phone), etc.

There are five simple finite forms (the Present, the Aorist, the Imperfect, the Future I, the Future II) and six Compound finite forms (the Perfect, the Pluperfect, the Future I, the Future II, the Present Conditional and the Past Conditional).

The aim of this thesis is to prove that a morphological Tense marker is absent from Slavic and few non-related languages (Yoruba, Igbo, Arabic, Chinese). However, the semantic aspect of Tense is still present at LF. In other words, the [T] feature is still checked, although not by Tense Head, but compositionally, by different combinations of Aspect and Agreement features.

If this proves to be the case, then, could one still be justified in calling Serbo-Croat finite forms +*Tense* forms? Yes and no.

If this term refers to their semantic impact, then − yes. Although Tense morphology is absent from them, Agreement and Aspect inflection ensure checking of the [T] feature at LF. If this term describes the morphological make-up of these forms, then − no, as neither of these forms contains an independent Tense morpheme.

To avoid any confusion, I shall, from this point on, refer to them as finite (morphological) forms[29].

5.4.1. The Present Finite form

The Present Finite is formed from the Present stem of the main verb, inflected for Person and Number. It denotes an event that is simultaneous with, and lasts at least as long as, the moment of speech. The Person and Number (hereafter P+N) suffixes used for the Present Finite are from the Primary set of Person markers (P1). Recall that Proto-Indo-European had a choice of various Person morphemes. Serbo-Croat has preserved both the Primary (P1) and the Secondary (P2) set of Person markers[30].

Table 1.3. Endings of the Present Finite Form:

	singular			plural
1.	+m (+u)		1.	+mo
2.	+š		2.	+te
3.	+∅		3.	+u, -ju, -e

Only two verbs maintain -u in the 1st singular, namely *hoću/ću* 'I will' and *mogu* 'I can'. This is a result of a series of old Proto-Indo-European and Proto-Slavonic phonological changes affecting the sounds that end up next to each other once inflection is added.

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[29] Many thanks to Professor Joseph Emonds for suggesting this term.
[30] Table 1.2. Active Person endings of Proto-Indo-European, page 14.

Table 1.4. The Present Finite form of the verb *spava-* 'sleep':

singular	plural
1. spava+m	1. spava+mo
2. spava+š	2. spava+te
3. spava+∅	3. spava+j+u

The Present Finite of the verb *biti* 'to be':

The verb *biti* 'to be' can appear in its full or its clitic form. As a general rule, if this verb is focussed or sentence-initial it must take the full structure. In any other case the clitic form is used. This verb also has what is known as 'an extra Present Tense stem', used in conditional clauses, Imperative and as an Auxiliary for the Future II Tense.
Present stem 1, *jes-*, is imperfective,
Present stem 2, *bude-*, is perfective,
Infinitive stem (stem 3), *bi*, is bi-Aspectual. (Infinitives and related forms).

Table 1.5. The Present Finite form of the 'Present stem 1' (*jes-* 'be'):

singular	plural
1. (je)sam	1. (je)smo
2. (je)si	2. (je)ste
3. je(ste)	3. (je)su

Full forms: *jesam, jesi, jeste, jesmo, jeste, jesu.*
Clitic forms: *sam,   si, je,   smo,   ste,   su.*

Table 1.6. The Present Finite form of the 'extra Present stem, 2' (*bude-* 'be'):

singular	plural
1. bude+m	1. bude+mo
2. bude+š	2. bude+te
3. bude+∅	3. bud+u

Later on, we shall look at the three stems in a different way. I am hoping to show that it is not 'by chance' that SC has three stems for the verb *to be*, but, in fact, they are three forms of the same stem and only *one* is used for the Present Finite.

Table 1.7. The Present Finite of the verb *htjeti* 'to want' (*htje-*from *hotje-*):

singular	plural
1. hoće+u = hoću	1. hoće+mo
2. hoće+š	2. hoće+te
3. hoće+∅	3. hoće+

Full forms: *hoću, hoćeš, hoće, hoćemo, hoćete, hoće.*
Clitic forms: *ću,   ćeš, će,   ćemo,   ćete,   će.*

5.4.2. The Aorist Finite

The Aorist and the Imperfect Finite are becoming increasingly archaic and have already entirely disappeared from some dialects[31]. Although almost never used, they can still be found, though very rarely, as optional past forms. SC verbs are either perfective, e.g. *zapisati* 'to write down' or imperfective, e.g. *pisati* 'to be writing'. There are also a number of bi-Aspectual verbs. Almost every perfective verb can be made imperfective by adding various affixes, and vice versa. More is said about this in Chapter III (Aspect). The Aorist is formed from perfective verbs only or imperfective verbs made perfective. The Aorist describes events and expresses surprising happenings that have been completed in the past. It is usually replaced by the Past Finite, which applies to both perfectives and imperfectives. The Aorist inflection contains the Secondary set of Person endings (P2), accompanied with Number markers:

Table 1.8. The Endings of the Aorist Finite:

	singular		plural
1.	+h	1.	+smo
2.	+∅	2.	+ste
3.	+∅	3.	+še

SC ignores thematic vowels with most verbs whose Infinitive stem ends in a vowel. With verbs whose Infinitive stem ends in a consonant, the thematic vowel is *–o*.

Table 1.9. The Aorist Finite of the verb *bi-* 'be'

singular	plural
1. bi+h	1. bi+smo
2. bi+∅	2. bi+ste
3. bi+∅	3. bi+še

The verb *biti* 'to be' has a bi-Aspectual stem, used for formation of the Infinitive (so-called the Infinitive stem), which can also form both the Aorist and the Imperfect Finite.

Table 1.10. The Aorist Finite of the verb *htje-* 'want'   (*-do-* = perfective Aspect)

singular	plural
1. htje+do+h	1. htje+do+smo
2. htje+de+∅	2. htje+do+ste
3. htje+de+∅	3. htje+do+še

This verb is an imperfective verb and can only appear in the Aorist if transformed into a perfective by the suffix *–d–* (thematic vowel *–o-*).

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[31] Browne (1993), page 330: " Although Aorist and, particularly, imperfect are not found in all dialects, the literary standards retain them as optional past tenses..."

5.4.3. The Imperfect Finite

The Imperfect Finite is a relatively new invention. Proto-Indo-European did not have the Imperfect Finite until very late, just before the Proto-Slavonic period. It is formed of imperfective verbs only or perfective verbs made imperfective through the use of suffixes. It describes background situations, repeated or uncompleted action. Like the Aorist Finite, it is usually replaced by the Past Perfect Finite, which takes no notice of the Aspect of the predicate. When compared with the Aorist endings, the Imperfect suffixes below show how the presence of the thematic vowel prevented loss of -s- in 2 sing and 3 sing, or caused change of -s- into -h- and of -o+nt- to -u-, in the 3 plural.

Serbo-Croat Imperfect endings also contain the Secondary set of Person and Number markers (P2+N). Due to the fact that many imperfective verb stems end in one of the imperfective markers, these markers often enter into various phonological processes with the (P2+N) inflection. This is why, although both the Aorist Finite and the Imperfect Finite have the same endings (it is just that they apply to verbs with different Aspect qualities), these endings may appear different. This is explained and illustrated in Chapter VII, Sections 5.2.2. and 5.2.3, pages 197-199.

Table 1.11. The endings of the Imperfect Finite:

singular		plural	
1.	+h	1.	+smo
2.	+še	2.	+ste
3.	+še	3.	+hu

Table 1.12. The Imperfect Finite of the verb bi- 'be'   (-ja- = imperfective Aspect)

singular	plural
1. bi+ja+h	1. bi+ja+smo
2. bi+ja+še	2. bi+ja+ste
3. bi+ja+še	3. bi+ja+hu

Both the Aorist Finite and the Imperfect Finite use the Infinitive stem, which is bi-Aspectual. However, when in the Imperfect, its Aspect has to be made unambiguous through the imperfective marker, the suffix -ja-.

Table 1.13. The Imperfect Finite of the verb htje- 'want'

singular	plural
1. htje+h	1. htje+smo
2. htje+še	2. htje+ste
3. htje+še	3. htje+hu

Being an imperfective. this verb has no problems with forming the Imperfect Finite. Contrary to its Aorist Finite form. no suffix is called for this time.

5.4.4. The Past Perfect Finite

The Past Perfect Finite is used as an 'all-purpose' past finite form. All other past finite forms (the Aorist, the Imperfect and the Pluperfect) are becoming or have become archaic and they are all replaced by the Past Perfect Finite, which is applied to any verb regardless of its Aspectual properties. It consists of:
- AUX: the Present Finite form of the verb *biti* 'to be', and
- MV: the l-participle of the MV, inflected for Gender and Number (G+N).

Table 1.14. The Present Finite of the AUX *jes-* 'bi' *(biti* 'to be')

singular		plural	
1. jesa+m	(sa+m)	1. jes+mo	(s+mo)
2. jes+i	(s+i)	2. jes+te	(s+te)
3. jes+te	(je+ Ø)	3. jes+u	(s+u)

Gender and Number suffixes are added to the l-participle of the MV (Infinitive stem+*l*). The 3rd sing masculine has no vocalic suffix and the final –*l* has been vocalised to –*o* (Slovene, for example writes *Gledal je* 'He was looking' and pronounces [gledaw je]).[32]

Table 1.15. Gender and Number suffixes

	singular	plural
feminine:	+a	+e
masculine:	+o	+i
neuter:	+o	+a

Table 1.16. The Past Perfect Finite of the verb *biti* 'to be'

singular		plural	
1. (je)sam	bil+a/bio/+o	1. (je)smo	bil+e/i/a
2. (je)si	bil+a/bio/+o	2. (je)ste	bil+e/i/a
3. je(ste)	bil+a/bio/+o	3. (je)su	bil+e/i/a

The Perfect (Past) Finite of the verb *biti* 'to be' is composed of the same verb used twice: as an AUX and as a MV. As a MV, it behaves like any other MV: its l-participle (Infinitive stem+*l*) is marked for Gender and Number.

Table 1.17. The Past Perfect Finite of the verb *htjeti* 'to want'

singular		plural	
1. (je)sam	htjel+a/htio/+o	1. (je)smo	htjel+e/i/a
2. (je)si	htjel+a/htio/+o	2. (je)ste	htjel+e/i/a
3. je(ste)	htjel+a/htio/+o	3. (je)u	htjel+e/i/a

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[32] I am grateful to David Bennett for pointing this out to me.

5.4.5. The Pluperfect Finite

The Pluperfect Finite describes an event that preceded another past action. It consists of:
- AUX: Imperfect Finite form of the verb *biti* 'to be' and
- MV: l-participle of the MV inflected for Gender and Number.

Since the Perfect (Past) Finite can be used instead of any other past finite, it can replace the whole Pluperfect Finite, or only its Imperfect part (the AUX). The most preferred option is replacing the Pluperfect entirely, by using the Past Perfect Finite. If it replaces the entire Pluperfect Finite, the Pluperfect Finite form becomes the Perfect (Past) Finite form. If it replaces only the AUX, the result still counts as a type of Pluperfect, but slightly less archaic than the regular Pluperfect Finite. In this case we get:
- AUX: Present Finite of the verb *biti* 'to be',
          l-participle of the verb *biti* 'to be' inflected for Gender and Number
- MV: l-participle of the MV inflected for Gender and Number.

Table 1.18. The Pluperfect Finite of the verb *biti* 'to be'

singular		plural	
1. bi+ja+h	bil+a/bio/o	1. bi+ja+smo	bil+e/i/a
2. bi+ja+še	bil+a/bio/o	2. bi+ja+ste	bil+e/i/a
3. bi+ja+še	bil+a/bio/o	3. bi+ja+hu	bil+e/i/a

Table 1.19. The Pluperfect Finite of the verb *htjeti* 'to want':

singular		plural	
1. bi+ja+h	htjel+a/htio/o	1. bi+ja+smo	htjel+e/i/a
2. bi+ja+še	htjel+a/htio/o	2. bi+ja+ste	htjel+e/i/a
3. bi+ja+še	htjel+a/htio/o	3. bi+ja+hu	htjel+e/i/a

5.4.6. The Future I Finite

Proto-Indo-European[33] did not have a separate form for the Future I Finite. The first attempt to invent an independent form for future was made in Proto-Slavonic[34]. It is generally assumed that the Future I Finite in modern Serbo-Croat is formed of the Present form of the verb *htjeti* 'to want' as the AUX and the Infinitive of the MV.

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[33] Schenker (1993), page 94: "... (Proto-Indo-European) The future was originally expressed through the modalities of the subjunctive or optative. Specific future-tense formations seem to be Late Proto-Indo-European dialectal innovations..." (Subjunctive expressed probability or expectations).

[34] Schenker (1993), page 95: "... A Proto-Slavonic innovation was the imperfective future expressed by the infinitive plus the present-tense forms one of the Auxiliary verbs: *to be, to have, to want* or *to begin.*

Table 1.20. The Present clitic forms of the verb _htjeti_ 'to want' (_htje-_ from _hotje-_)

     singular   plural
1. ću   1. ćemo
2. ćeš   2. ćete
3. će   3. će

Table 1.21. The Future I Finite of the verb _biti_ 'to be':

singular   plural
1. ću   bi+ti   1. ćemo bi+ti
2. ćeš bi+ti   2. ćete bi+ti
3. će   bi+ti   3. će   bi+ti

Table 1.22. The Future I Finite of the verb _htjeti_ 'to want':

     singular   plural
1. ću   htje+ti   1. ćemo htje+ti
2. ćeš htje+ti   2. ćete htje+ti
3. će   htje+ti   3. će   htje+ti

5.4.7. The Future II Finite

The Future II Finite denotes a future action that precedes another future action. Its main environments are temporal and conditional clauses where it expresses a future possibility ('When/If I see her...'). It is formed of the Present Finite of the perfective verbs only. The only way that the imperfective verbs can take the Future II Finite is if they are preceded by the _perfective_ AUX – Present Finite of the perfective version of the verb _bude-_ 'to be'. The MV now has the l-participle form and it is inflected for Gender and Number.

Table 1.23. The Future II Finite of the verb _zaspati_ 'to fall asleep': (perfective Aspect)

     singular   plural
1. zaspe+m   1. zaspe+mo
2. zaspe+š   2. zaspe+te
3. zaspe+∅   3. zasp+u

Table 1.24. The Future II Finite of _zaboraviti_ 'to forget':   (perfective Aspect)

     singular   plural
1. zaboravi+m   1. zaboravi+mo
2. zaboravi+š   2. zaboravi+te
3. zaboravi+∅   3. zaborave (e= i+u)

The Future II Finite of imperfective verbs:

Imperfective verbs must be accompanied by the perfective AUX *biti* 'to be' with the Present Finite endings. The Future II Finite of imperfective verbs is formed in such a way that the above form of the verb *biti* 'to be' is used as the AUX, and the verb in question acts as the MV and appears as an l-participle, inflected for Gender and Number.

Table 1.25. AUX: The Present Finite of the *perfective* stem of *biti* 'to be' (*bude-* 'be'):

singular	plural
1. bude+m	1. bude+mo
2. bude+š	2. bude+te
3. bude+∅	3. bud+u

Table 1.26. The Future II Finite of the verb *spavati* 'to sleep':   (imperfective Aspect)

singular		plural	
1. budem	spaval+a/spavao/o	1. budemo	spaval+e/i/a
2. budeš	spaval+a/spavao/o	2. budete	spava+e/i/a
3. bude	spaval+a/spavao/o	3. budu	spaval+e/i/a

Take, for example, the verb *piti* 'to drink'. This is an imperfective verb, but, like any other imperfective verb, it can be made perfective by adding a perfective suffix. The perfective suffix for this verb is *po-*. The two possible stems of the verb *popiti/piti* 'to drink up'/'to drink' are the perfective: *popi-* 'to drink up' and the imperfective: *pi-* 'to drink'. These two stems differ from each other in their Aspect. They form the Future II in different ways. The perfective stem does not require a perfective AUX. It simply takes the same endings that are also used for the Present Finite:

Table 1.27 The Future II Finite of the verb *popi-* 'drink up'   (*po-* = perfective Aspect)

singular	plural
1. popije+m	1. popije+mo
2. popije+∅	2. popije+te
3. popije+∅	3. popij+u

As Future II Finite applies to perfective verbs only, imperfective verbs have to be made perfective or take a perfective AUX in order to assume the Future II Finite form. Thus, the imperfective stem *pi-* 'to drink' is either transformed into the perfective stem *popi-* 'to drink up' above, or it takes the perfective AUX *bude-* 'be':

Table 1.28. The Future II Finite of the verb *pi-* 'drink'   (imperfective Aspect)

singular		plural	
1. budem pil+a/pio/o		1. budemo pil+e/i/a	
2. budeš pil+a/pio/o		2. budete pil+e/i/a	
3. bude pil+a/pio/o		3. budu pil+e/i/a	

5.4.8. The Present Conditional Finite

The Present Conditional Finite is used in conditional clauses to express an unfulfilled possibility (*If the weather was nice, I would go out...*). It consists of the Aorist Finite of the verb *biti* 'to be' and the l-participle of the MV, inflected for Gender and Number.

Table 1.29. The Present Conditional Finite of the verb *zaboraviti* 'to forget':

singular	plural
1. bih zaboravil+a/zaboravio/o	1. bismo zaboravil+e/i/a
2. bi zaboravil+a/zaboravio/o	2. biste zaboravil+e/i/a
3. bi zaboravil+a/zaboravio/o	3. biše zaboravil+e/i/a

Table 1.30. The Present Conditional Finite of the verb *biti* 'to be':

singular	plural
1. bih bil+a/bio/o	1. bismo bil+e/i/a
2. bi bil+a/bio/o	2. biste bi+e/i/a
3. bi bil+a/bio/o	3. biše bil+e/i/a

Table 1.31. The Present Conditional Finite of the verb *htjeti* 'to want':

singular	plural
1. bih htjel+a/htio/o	1. bismo htjel+e/i/a
2. bi htjel+a/htio/o	2. biste htjel+e/i/a
3. bi htjel+a/htio/o	3. biše htjel+e/i/a

5.4.8. The Past Conditional Finite

The Past Conditional Finite is also used in conditional clauses. It expresses unfulfilled past possibility (*If the weather had been nice, I would have gone out...*). The Past Conditional Finite is a complex three-element finite. Its AUX is the verb *biti* 'to be' that has the form of the Present Conditional, while the MV assumes the form of the l-participle, inflected for Gender and Number

Table 1.32. The Past Conditional Finite of the verb *zaboraviti* 'to forget':

singular	plural
1. bih bil+a/bio/o zaboravil+a/zaboravio/o	1. bismo bil+a/bio/o zaboravil+e/i/a
2. bi bil+a/bio/o zaboravil+a/zaboravio/o	2. biste bil+a/bio/o zaboravil+e/i/a
3. bi bil+a/bio/o zaboravil+a/zaboravio/o	3. biše bil+a/bio/o zaboravil+e/i/a

6) Summary

In order to understand the text ahead, it is important to observe the historical development of phonological, morphological and syntactic aspects of the ancestors of the today's Slavic languages. If more information is needed on the background of these linguistic developments, please refer to Chapter VII (Appendix), where detailed explanations and examples can be found.

We now move on to Chapter II where I give a different account of the above finite morphological forms and show that Serbo-Croat, and many more languages, have not developed independent Tense morphology. Temporal information in these languages is communicated through the morphology of Aspect and Agreement.

To avoid confusion, the finite forms of Slavic and other tenseless languages are still referred to as *finite morphological forms*, while the equivalent forms in English and other languages with Tense morphology, are called *Tense forms*.

II TENSE

1) Introduction
2) Serbo-Croat – a tenseless language?
3) Temporal information in Serbo-Croat
4) Summary

1) Introduction

The starting point for this research was a surprising realisation that Serbo-Croat finite forms seem to be more concerned with non-temporal characteristics of a particular action than with placing it in a specific time frame.

Chomsky (1995) ends his investigation of the status of Agr[35], by concluding that it should be assimilated with T, which is optionally marked for phi-features as it is drawn from the lexicon. Chomsky (1995) does not question the status of T while the category of Aspect is not considered nor mentioned at all. There is no reference to Aspect at any point in the Minimalist Program (1995). After investigating the functional categories of T, C, D and Agr[36], he concludes that languages universally project only the first three: T, C and D.

If this is the case, then the existence of a Tense projection necessarily implies the existence of a Tense Head that projects. This further means that the temporal property of any given finite predicate is provided by an independent Tense marker[37], even if one wants to argue for the possibility of its non-overt existence in a given language. In other words, all languages should have independent Tense morphology (a Tense Head that projects), whether in the form of suffixes or independent words.

This works for English and similar languages, which have a number of morphemes that contribute Tense information (i.e. English: the past marker *–ed*, the future marker *will/shall*, the null present marker), but not for Serbo-Croat type languages. No element in any of the Serbo-Croat finite forms could be isolated as an independent Tense

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[35] Chomsky (1995), page 377: "...a variety of apparent reasons for inclusion of Agr in the lexical inventory have been eliminated. The question of its existence is therefore narrowed, though not eliminated, as not all arguments for Agr have been considered. The discussion has been based on the assumption that Agr has no phi-features – that these features are assigned to substantive lexical items as they are drawn from the lexicon. If Agr exists as the locus of phi-features, it has an even more restricted role and unique status than before, with no apparent impact for the core computational processes; that seems dubious at least..." He concludes that Agr does not exist and that the phi-features are added optionally to the predicates in the numeration stage. Phi-features of predicates are -Interpretable, while those of nouns are +Interpretable.

[36] Chomsky (1995), page 349: " The first three have Interpretable features, providing 'instructions' at either or both interface levels. Agr does not; it consists of -Interpretable formal features only. We, therefore, have fairly direct evidence from interface relations about T, C and D, but not Agr."

[37] Please refer to the footnotes 4 and 25 on pages 2 and 18, respectively.

morpheme. In Serbo-Croat, temporal information is communicated by different categories: Aspect, which is not mentioned in Chomsky (1995), and Agreement.

The purpose of Chapter II is to prove that this is the case and give a more detailed analysis of the Serbo-Croat finite forms. A number of interesting facts will be considered. For example, certain finite verb forms do not denote present, although they have the same Present Finite form endings as those verb forms that do communicate present. The only difference between them is Aspect.

I will explain why it is possible that the endings of the Future II Finite forms are identical to those of the Present Finite, both consisting of the Primary set of Person and Number markers; and that two other distinct finite forms, the Aorist and the Imperfect also use the same endings, the Secondary set of Person and number markers.

I also analyse the possibility that the Future I Finite is not an independent finite form, but that it is expressed through the modal meaning of the verb 'to want' in the Present Finite form. Finally, I give reasons why the Past Perfect Finite in Serbo-Croat can replace other past finite forms and why 'back shift'[38] (found in English) does not occur in Serbo-Croat.

At the end of this Chapter, I identify the factors that, in the absence of an independent Tense marker, help communicate temporal information in Serbo-Croat.

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[38] According to Quirk and Greenbaum (1973), page 342, 'back shift' refers to the change of tense in English indirect (reported speech), when the move into the past for the reporting (main) clause results in a corresponding shift into the past (or if necessary, further into the past) in the reported (subordinate) clause.

2) Serbo-Croat – a tenseless language?

2.1. The Present Finite

The Present Finite form consists of the Present stem and inflection. The Present Finite inflection is composed of the Primary set of Person (P1) and Number markers (N):

Table 2.1. The endings of the Present Finite (P1+N):

	singular	plural
1st	+m	+mo
2nd	+š	+te
3rd	+Ø	+ju/u

However, having looked into a large number of verbs carrying the above inflection, I have found a pattern of behaviour that has made me divide these forms into three groups. For convenience, I have called them groups A, B and C. It is important to note that, although all the three groups have identical (P1+N) endings, only the A and C groups can be interpreted as present, while the B group verbs denote future.

Table 2.2. verb forms with (P1+N) inflection:

Infinitive = stem + ti (Inf. marker)   verb forms, 1 sing

		A group ("imperfective")	B group ("perfective")	C group ("imperfective")
I shake	tres-ti	tresem	o+tresem	o+tres+a+m
I pluck	bra-ti	berem	po+berem	po+bir+a+m
I send	sla-ti	šaljem	po+šaljem	po+šilj+a+m
I kill	bi-ti	bijem	u+bijem	u+bij+a+m
I write	pisa-ti	pišem	is+pišem	is+pisu+je+m
I praise	hvali-ti	hvalim	po+hvalim	po+hvalju+je+m
I hide	kri-ti	krijem	sa+krijem	sa+kri+va+m
I ride	jaha-ti	jašem	od+jašem	od+jahi+va+m
I scratch	greba-ti	grebem	o+grebem	o+greba+va+m
I sink	tonu-ti	tonem	po+tonem	po+tonja+va+m
I rot	trunu-ti	trunem	is+trunem	is+trunja+va+m
I love	volje-ti	volim	za+volim	za+volja+va+m
I hold	drža-ti	držim	po+držim	po+drža+va+m
I read	čita-ti	čitam	is+čitam	is+čita+va+m

Closer examination of the morphological components of the above three groups reveals that it is their Aspectual properties that make all the difference. In Serbo-Croat, the Aspect value (imperfective or perfective) of a verb is either inherent or acquired through a large system of Aspect prefixes, infixes and suffixes.

In Serbo-Croat, in most cases, Aspect affects the meaning of verbs. In other words, changing the Aspect of a verb may slightly or drastically affect its semantics. For example, compare the English translations (given in the parenthesis) of each of the three verbs below:

A group: imperfective verb *pisati* 'to write'
B group: perfective verb *potpisati* 'to sign', where *pot-* is a perfective Aspect suffix
C group: perfective verb made imperfective *potpisivati* 'to be signing' (*–iv* is an imperfective Aspect suffix.)

Only the A and the C form can be interpreted as present (actions holding at the present time as well as habitual situations, a habit that holds at all times), while the B form cannot. If we remember that it is crucial for a present action that it must be simultaneous with the moment of speech, it makes sense that only imperfective (continuous, non-complete) verbs satisfy this condition (A, C). The action must be going on while we speak, it cannot be completed. The moment that the action stops (it is completed), this condition is broken.

English has independent Tense morphology, so the temporal interpretation of its finite forms does not depend on their Aspectual properties as in Serbo-Croat. Aspect value does not affect Tense marking in English. Thus it is possible to have the Present Perfect Progressive in English, although this is not allowed in Serbo-Croat:

(12a) English Present Perfect Progressive:
    I <u>have been living</u> here for 10 years.   = still living here NOW
    'live'-imperfective

(12b) Serbo-Croat imperfective Present:
    Ja <u>živim</u> ovdje 10 godina.   = still living here NOW
    'live'-imperfective

(13a) English Present Perfect:
    I <u>have lived</u> here for 10 years.   = still living here NOW
    'live'-perfective

(13b) Serbo-Croat perfective Present:
    *Ja <u>odživim</u> ovdje 10 godina.
    'live'-perfective   (impossible: perfective Aspect and present interpretation.)

The A group verbs

The A group verbs are inherently imperfective, *tresti* 'to be shaking', *ići* 'to be going', *kriti* 'to be hiding', etc. As such, they are simultaneous with the moment of speech and prime candidates for the Present Finite Form.

The B group verbs

If perfective prefixes (*o-*, *sa-*, *od-*, *do-*, *po-*, *za-*, *is-*, *u-...* etc) are added to the A group verbs, the imperfective verbs from the A group become the perfective verbs from the B class. In the vast majority of cases, this prefix does not only change the Aspectual properties of the verb, but also its lexical meaning:

The A form: *pisati*, imperfective 'to write',
The B form: <u>*potpisati*</u>, perfective 'to sign'.

Perfective verbs suggest a completed action. If completed, the action cannot be simultaneous with the moment of speech. This is why the B group verbs cannot denote present. They lack the ability to signal continuity or duration[39]. The B forms can only appear in conditional and temporal clauses and they are interpreted as the Future II. They cannot appear in declarative clauses.

(14a) The A group: Ja pišem.
        I write-imperfective+1st+sing
        (I write/ am writing.)

(14b) The B group:*Ja **potpišem**.
        I sign-perfective+1st+sing
        (I sign/ am signing.)

(14c) but: Kad/Ako **potpišem**...
        When/If sign-perfective—1st+sing
        (When/If I sign...)

If the above is correct, then, if there was a way to make a perfective action simultaneous with the moment of speech, it would be possible to interpret the perfective verbs above as present. One way of doing this would be by repeating the perfective action. Although this does not make it continuous, the repetition counts as a form of permanence. The B forms can appear in declarative clauses, if, and only if, they are used with an explicit time adverbial that specifies an ongoing repetition that lasts through the moment of speech and, in a way, makes these verbs imperfective. The B group:

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[39] Comrie (1985), page 92:
"Somewhat similar groupings of recent past with present are found in some other languages. Thus, in Bamileke-Ngyemboon, the so-called present tense has an imperfective/perfective aspectual distinction. The present imperfective indicates an ongoing action, but the present perfective is used specifically to indicate a recent past situation. Similar aspectual oppositions between present and the recent past are noted for Kom and Noni. In the West African languages cited, for which the data are more reliable in their detail than for Nenets, this seems to be the maximal utilisation of the intersection of tense and aspect: since the imperfective aspect is rarely needed for recent past situations, and the perfective aspect is rarely needed for currently ongoing situations, the assignment of the appropriate time relation difference to the aspectual opposition gains the maximum economy while not violating the basic meaning of the aspectual opposition. It may even be academic whether the tense that overlaps recent past and present is called present or recent past, or a combination of the two."

(15a) *Ja **potpišem** ugovor.
    I perfective+sign +1ˢᵗ+sing   contract
    (I sign a contract.)
but:
(15b) Ja **potpišem** ugovor **kad god počnem novi posao.**
    I perfective+sign +1ˢᵗ+sing   contract whenever start-perfective+1ˢᵗ+sing new job
    (I sign a contract **whenever I start a new job.**)

Alternatively, the perfective verbs B can simply drop the perfective prefix, and become the A forms (imperfective), but by doing this, they lose the new meaning that the perfective suffix brings. If the new meaning is to be preserved, it is still possible to make a B verb imperfective by adding an imperfective suffix (bold below) which varies from verb to verb and whose choice is determined lexically. If a prefixed perfective verb (B group) is added an imperfective suffix (which precedes the P1+N inflection) the result is an imperfective verb of the C group.

Please note that Aspect suffixes often trigger various phonological processes, affecting the quality of vowels and/or consonants of both the verbal stem and the inflection. For this reason, the morpheme boundaries are not always immediately obvious. The reader should be aware of this fact, and, if needed, refer to Chapter VII, Sections 1. and 3., where more information on Serbo-Croat phonological transformations can be found. The C group:

(16) Ja <u>potpisuj</u>em ugovor.
    *I <u>perfective</u>+sign-**imperfective**+1ˢᵗ+sing contract*
    (I sign/am signing a contract.)

Now, the focus is on the duration of that tiny moment of the action expressed by the perfective verb. Through the imperfective suffix, this 'flash moment' is 'stretched' to last for at least as long as the moment of speech. In this case, the verb is computed as present.

To summarise, the Serbo-Croat Present Finite form denotes an action that is simultaneous with the moment of speech and to satisfy this condition, the action in question must not be completed (in other words, it must not be perfective). It is irrelevant how long ago the action started or how long in the future it may continue.[40]

Subsections 2.1.1. to 2.1.4. provide a few examples of the distribution of the A, B and C forms in various linguistic environments.

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[40] Comrie (1985). page 92:
"A more puzzling relevance of recent past and immediate future cut-off points is found in Kalaw Lagaw Ya. Here there is one tense that is used to refer to 'events that have just been completed or that are going on at present', and another that is used to refer to 'events in the immediate future. and often events going on right now.' Both tenses are compatible with the adverbial *kedha thonara* 'at this time'. and there is no separate present tense in addition to these two."

2.1.1. Declarative clauses

Within declarative clauses, the A and the C forms (both imperfective) denote present, but the B forms (perfective) can never describe present, *unless* accompanied by a time adverbial signalling current repetition (underlined). Thus, the B forms are sometimes allowed to refer to present and sometimes not. This depends, not on the verb form itself, but on the external factor - the presence or absence of an appropriate adverbial.

(17a) A: Mi <u>pišemo</u> dokumente.   write-imperfective
       We <u>write/are writing</u> documents.

(17b) B: *Mi **pot+pišemo** dokumente.   write-perfective
       We <u>sign</u> documents.

(17c) B: Mi **potpišemo** dokumente **svako jutro**. write-perfective
       We <u>sign</u> documents <u>every morning</u>.

(17d) C: Mi <u>pot+pisu+je+mo</u> dokumente.   write-perfective+imperfective
       We <u>sign/are signing</u> documents.

Whether a B form will be interpreted as present or not depends on a factor *outside* the verb form itself - the adverbial. If an independent Present Tense morpheme were incorporated in the B forms, it would always denote the present, whether this adverbial is present or not. Thus, the B forms must lack a Tense morpheme. But, if we disregard the Aspect prefix, the B forms are identical to the A forms. And, if there is no Tense morpheme in the B forms, it must also be absent from the A forms.

The A and the C forms can both be computed as present. If a Present Tense morpheme is absent from the A forms, then it must also be absent from the C forms, as both the A and the C (and the B) forms have the same endings. I thus conclude that there is no Present Tense morpheme in any form in Table 2.2.

2.1.2. Conditional clauses

(18a) A: Ako <u>pišemo</u> dokumente...   (so-called Present)
       If (we) <u>write/are writing</u> documents...

(18b) B: Ako **pot+pišemo** dokumente...   (Future II)
       If (we) <u>sign</u> documents... (...in future)

(18c) C: Ako <u>pot+pisu+je+mo</u> dokumente...   (so-called Present)
       If (we) <u>sign</u> (are signing) documents...

In conditional clauses, the A and the C forms (imperfective) denote present, while the B forms (perfective) are given the temporal interpretation of the Future II, exclusively.

2.1.3. Indirect Speech

On the basis of Indirect Speech examples, the only valid description of a Serbo-Croat present action should be that it must last at least as long as the moment of speech, and it is irrelevant when it starts or finishes. In other words, the Present Finite forms are interpreted as present, if and only if, the moment of speech (with which they are simultaneous) happens to be a present moment, as is the case in Direct Speech, where the moment of speech is *now* (→ present).

This indirectly means that, in Indirect Speech, the temporal information that these forms denote in subordinate clauses is dependent on the moment of speech, which is dictated by the temporal properties of the main clause predicate (in other words, from the point of view of the original speaker and not the speaker that reports the utterance) . Notice that, although the same predicate form is used in all the three subordinate clauses, the time that is communicated changes with the change of the moment of speech, given in the main clause. The B forms cannot be used in subordinate clauses either, unless, again, accompanied with an appropriate repetition adverbial. The A forms:

(19a) A: Kažemo [da **pišemo** dokumente].
      We say [that we **write/are writing** documents].
      (Kažemo = present, therefore **pišemo** = present)

(19b) A: Rekli smo [da **pišemo** dokumente].
      We said [that we **wrote/were writing** documents].
      (Rekli smo = past, therefore **pišemo** = past)

(19c) A: Reći ćemo da [**pišemo** dokumente].
      We shall say [that we **shall write/shall be writing** documents].
      (Reći ćemo = future, therefore **pišemo** = future)

The B forms:
(20a) B: *Kažemo [da **potpišemo** dokumente].
      We say [that we **sign/are signing** documents]. but:
(20b) B: Kažemo [da **potpišemo** dokumente svaki dan].
      We say [that we **sign/are signing** documents every day].

(20c) B: *Rekli smo [da **potpišemo** dokumente].
      We said [that we **sign/were signing** documents]. but:
(20d) B: Rekli smo [da **potpišemo** dokumente svaki dan].
      We said [that we **signed/were signing** documents every day].

(20e) B: *Reći ćemo [da **potpišemo** dokumente].
      We shall say [that we **shall sign/shall be signing** documents]. but:
(20f) B: Reći ćemo [da **potpišemo** dokumente svaki dan].
      We shall say [that we **shall sign/shall be signing** documents every day].

The C forms:

(21a) C: <u>Rekli smo</u> [da **potpisujemo** dokumente].

           We <u>said</u> [that we **were signing** documents].

(21b) C: <u>Kažemo</u> [da **potpisujemo** dokumente].

           We <u>say</u> [that we **are signing** documents].

(21c) C: <u>Reći ćemo</u> [da **potpisujemo** dokumente].

           We <u>shall say</u> [that we **shall be signing** documents].

In English, the move into the past of the main clause predicate forces a corresponding shift into the past (or further into the past) of the subordinate clause predicate:

(22a) We <u>say</u> [that we **write** documents].

        *We <u>said</u> [that we **write** documents].

(22b) We <u>said</u> [that we **wrote** documents].

The reason for the difference between English ('back shift') and Serbo-Croat Indirect Speech (no 'back shift') lies in the fact that English finite forms are independently marked for Tense (by an independent Tense morpheme), while the Serbo-Croat finite forms lack independent Tense morphology. Serbo-Croat relies on the properties of an action (in relation to the moment of speech) to provide a clue for its temporal interpretation. The presence of a specific Tense morpheme in every English finite form prevents that verbal form from having any temporal information other than the one brought by the Tense morpheme. The temporal information is determined by a particular Tense Head within the predicate and there is no freedom in Tense interpretation.

Serbo-Croat finite forms lack a Tense Head and the temporal interpretation is computed on the basis of the description of the properties of the action in question. Thus, if the action is imperfective (continuous), then the action is simultaneous with the moment of speech (the deictic[41] centre in Serbo-Croat). If the moment of speech given by the main

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[41] Comrie (1985), page 13:

" Time itself does not provide any landmarks in terms of which one can locate situations. If time had a beginning, we do not know when that beginning was, so we cannot locate anything else relative to that beginning (other than, trivially, by saying that the situation is posterior to that beginning). If time has an end, again we do not know its location, so again no non-trivial location is possible relative to that end point. Therefore, it is necessary to establish some arbitrary reference point, with reference to which we can locate situations in time. In principle, a number of logical possibilities for reference points are available. and for lexically composite expressions many of these are used in language...."

" What one rather finds most typically is the choice of the speech situation as the reference point. i.e. the present moment (for time), the present spot (for space), and the speaker and the hearer (for person). As far as tense is concerned, then, the reference point is typically the present moment. and tenses locate situations either at the same time as the present moment (or perhaps including the present moment). or prior to the present moment. or subsequent to the present moment. with further potential categories if degrees of remoteness from the present moment are distinguished grammatically.

A system which relates entities to a reference point is termed a deictic system. and we can therefore say that tense is deictic. (By contrast. aspect is non-deictic. since discussion of the internal temporal constituency of a situation is quite independent of its relation to any other time point.)"

clause predicate, happens to be present, then the imperfective action of the subordinate clause (simultaneous with the moment of speech) is interpreted as present. If, on the other hand, the moment of speech given by the main clause predicate, is moved to the past, then the imperfective action of the subordinate clause (simultaneous with the moment of speech) is interpreted as past, etc.

The lack of independent Tense morphology in Serbo-Croat means more freedom in the temporal interpretation of the finite forms in this language.

2.1.4. Inflected Infinitive clauses

Section 3, page 91, Chapter IV is devoted to a detailed analysis of the Inflected Infinitives. Here, I shall briefly mention that, besides the ordinary, Uninflected Infinitives, Serbo-Croat also has Inflected Infinitives. All that needs to be noted at this stage is that, Serbo-Croat sometimes inflects its Infinitives for Person (the Primary set, P1) and Number. As P1+N is also the inflection of the Present Finite form, the Inflected Infinitives have the same form as the Present Finite. However, they are interpreted as Infinitives (non-finites). Compare the interpretation of the two underlined clauses below:

(23) Present: **Pišemo** dokumente.
         Write+1ˢᵗ+pl documents
         (We write/are writing the documents.)

(24) Infinitive: Hoćemo [da [**pišemo** dokumente.]].
         Want+1ˢᵗ+pl [that [write+1ˢᵗ+pl documents]]
         (We want [to write the documents.])

We look into the details of Serbo-Croat Inflected Infinitives in Chapter IV, but for now, just note this difference in the interpretation. Native speakers are unable to assign temporal properties to the Infinitive clause verb in (24), while they compute the main clause verb, with the same inflection, as Present. For this to be possible, the inflection of the Present Finite forms cannot contain a Tense morpheme. The Serbo-Croat Inflected Infinitives are, probably, the strongest evidence for the absence of an independent Tense morpheme from Serbo-Croat. As Infinitives are non-finite forms, they have nothing to do with the temporal properties of an action. Therefore, for the purpose of the Inflected Infinitives, the Aspectual qualities of a verb should be irrelevant and the B forms should not be treated as exceptions, as is the case in the Present Finite. All the three verb forms with the (P1+N) endings (A, B, C) are allowed in the Inflected Infinitive clauses:

(25a) A:Mi hoćemo [da [**pišemo** dokumente.]].
         We want [to **write** the documents.]

(25b) B: Mi hoćemo [da [**potpišemo** dokumente.]].
         We want [to **sign** the documents.]

(25c) C:Mi hoćemo [da [**potpisujemo** dokumente.]].
         We want [to **be signing** the documents.]

Thus, we arrive at the following conclusions, regarding the Present Finite Form:

The Present Finite form does not contain a Tense morpheme.
Only imperfective verbs can denote the present time.
Perfective verbs must first be 'made imperfective', through an adverbial or an imperfective suffix, before they can be used to denote the present time.
Perfective verbs with the Present Finite endings are interpreted as Future II.
The Present Finite actions must last through the moment of speech, whenever it may be, which means that they can denote the present, past or future, depending on where in time the moment of speech happens to be placed (Indirect Speech).
The Present Finite forms appear in tenseless (Infinitival) clauses.

Table 2.3. The properties of the Present Finite:

Simultaneous with moment of speech.
Imperfective verbs.
Simple finite form.
Takes the Primary set (P1) of Person markers and Number markers (N).
Composition: imperfective verb+P1+N,   or
                   perfective verb+imperfective marker+P1+N,   or
                   perfective verb+P1+N and adverbial of repetition.

2.2. The Aorist Finite

A perfective verb communicates a completed action. In Serbo-Croat, if an action is completed, then it is automatically considered a past action[42] (completed, therefore not simultaneous with the moment of speech). Serbo-Croat past finite forms seem to work on the principle: 'completed, therefore - past' in relation to some reference point (usually the moment of speech or another action). (Even in English, *When John dies, I will inherit millions....*, the completed action *dies* is past in comparison with another action *will inherit*.) In Serbo-Croat, "completed" can be renamed "past".

The Aorist is formed from perfective verbs only and its inflection (P2+N) is composed of the Secondary Set of Person markers (P2) and Number markers (N).

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[42] Comrie. (1985). page 27:
"The illustrative example for the interaction of perfective aspect, context, and sequential interpretation will be taken from Russian, since Russian has an overt perfective/imperfective distinction. This example, from Nilin's novel *Zestokost* (Cruelty) is cited in this context by Forsyth (1970:65)... In the Russian example. (P) is placed after each verb in the perfective aspect. while the same symbol is placed after each translation equivalent verb in the English version:
- *Ja etogo ne govoril, -zasmejalsja (P) Uzelkov. Vynul (P) iz karmana svezuju packu papiros. razorval (P) ee s ugla, vytrjas (P) na ladon' tri papirosv. Odnu zazal (P) v zubax. dve protjanul (P) nam. Potom dostal (P) spicki.*
' I didn't say that.' laughed (P) Uzelkov. He took out (P) from his pocket a fresh packet of cigarettes. tore (P) it open at the corner. shook out (P) onto his palm three cigarettes. One he held (P) in his teeth. two he held out (P) to us. Then he got (P) the matches."

Table 2.4. The Aorist Finite endings (P2+N):

	singular	plural
1st	+h	+smo
2nd	+∅	+ste
3rd	+∅	+še

The Aorist Finite is interpreted as a perfective action completed before the moment of speech, again whenever this moment happens to be. As a result, verbs in the Aorist Finite can have almost any temporal interpretation, providing this condition is satisfied. For example, in Indirect Speech, the moment of speech specified by the main clause predicate may vary and the interpretation of the Aorist predicate of the subordinate clause changes accordingly.

Again, we conclude that, for this to be possible, a Tense marker must be absent from the Aorist inflection. To illustrate some of these cases:

(26a) Rekla je [da [**odoše** u školu]].
       She said [that [they **had gone** to school]].

(26b) Kaže [da [**odoše** u školu]].
       She says [that [they **have gone** to school]].
       She says [that [they **went** to school]].

(26c) Reći će [da [**odoše** u školu]].
       She will say [that [they **would have gone** to school]].
       She will say [that [they **have gone** to school]].
       She will say [that [they **are going** to school]].
       She will say [that [they **will go** to school]].

Any temporal interpretation of the above subordinate clauses is allowed as long as the temporal interpretation is *past* in relation to the moment of speech given by the main clause.

Thus, moving the temporal interpretation of the main clause predicate further towards the future gives more options for the temporal interpretation of the subordinate clause predicate. Although given in the Aorist Finite, the subordinate clause action may be understood as a future action, as long as it is completed before the moment of speech (given by the main clause predicate), which , in that case, also has to be in the future.

The Aorist Finite can sometimes be given future meaning in Direct Speech as well[43], for example: *Ja odoh.* (I left.) to mean: *Ja upravo odlazim.* (I am about to leave.)

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[43] Russian does the same with the Past Finite. Comrie (1985), page 20: "In several languages, the past tense can be used for imminent future events. Thus in Russian, the usual expression for use when one is about to leave is *ja posel*, literally 'I left.' Even though this is clearly not literally true."

Conclusions:

The Aorist Finite does not contain a Tense marker,
The Aorist Finite is used with pefective verbs only,
The Aorist Finite refers to a perfective action completed before the moment of speech.

Table 2.5. The properties of the Aorist Finite

Perfective action.
Completed before the moment of speech and therefore past in relation to the moment of speech (the moment of speech being specified by the main clause verbs in (26).
Simple finite form.
Composition: perfective verb+P2+N.

2.3. The Imperfect Finite

The Imperfect Finite form is formed of imperfective verbs only or of perfective verbs made imperfective through affixes. Modern Serbo-Croat Imperfect endings contain an imperfective verb marker (usually -ija-, which is the most common one). The Imperfect Finite uses the same inflection as the Aorist Finite (the Secondary set of Person markers and the Number markers, P2+N). Notice that the difference between modern Aorist and Imperfect endings (2 sing, 3 sing, 3 plur) arose because of the vowel in the imperfective marker, that precedes the (P2+N) inflection. The imperfective marker enters into phonological processes with the (P2+N) inflection, which is the reason why the Imperfect endings slightly differ from the Aorist endings.

Table 2.6. The Imperfect Finite endings (P2+N):

	Singular	Plural
1st	+ h	+ smo
2nd	+ še	+ ste
3rd	+ še	+ hu

In relation to the moment of speech, the Aorist describes a past perfective action, and the Imperfect a past imperfective action. This seems to be the only difference. Although morphologically two distinct finite forms (perf+P2+N vs. imperf+P2+N), temporally they are identical in the sense that they are both interpreted as past when compared with the moment of speech. This confirms the earlier observation that Serbo-Croat finite forms seem to be more concerned with the properties of a certain action than with placing it within a time frame. The Aorist (past perfective action) and the Imperfect (past imperfective action) are treated as separate finite forms.

In Indirect speech, the Imperfect Finite behaves just like the Present Finite and the Aorist Finite, changing its interpretation with the change of the finite form of the main clause predicate.

Conclusions:

The Imperfect Finite does not contain a Tense marker.
The Imperfect Finite is used with imperfective verbs only.
The Imperfect Finite refers to an imperfective past action.

Table 2.7. The properties of the Imperfect Finite

Imperfective action.
Completed before the moment of speech and therefore past.
Simple finite form.
Composition: imperfective verb+P2+N.

2.4. The Pluperfect Finite

The Pluperfect Finite is an archaic finite form and expresses an action that PRECEDES another past action, a kind of background action, regardless of its duration. Recall that the Present Finite and the Imperfect Finite both apply only to imperfective verbs, while the Aorist Finite allows perfective verbs only. The Pluperfect Finite, on the other hand, allows both perfective and imperfective verbs but requires an AUX, which must be imperfective, the verb *biti* 'to be'. The Pluperfect Finite is a compound form:

AUX: Imperfect Finite form of *biti* 'to be ',
MV: l-participle with Gender and Number markers (G+N).

The AUX verb *biti* 'to be' has the Imperfect Finite form. Previously, when the Pluperfect Finite was formed in this way, the Past Perfect Finite did not exist. There were only three options regarding the form of the AUX: the Present Finite, the Aorist Finite or the Imperfect Finite. The Pluperfect Finite is the 'most past' of all the past finite forms. Thus, being past themselves, the Aorist and the Imperfect probably stood a better chance of being chosen than the Present Finite.

The specific choice between the Aorist and the Imperfect was, most probably, made on the basis of the fact that, as the Pluperfect describes action that preceded another (main) past action, it can be seen as expressing a background situation. The Imperfect Finite itself is usually used to describe a background situation, while the Aorist Finite is a more dynamic form, used to narrate events and express surprising happenings.

Again, a Tense marker must be absent from the Pluperfect Finite form as well. It cannot be contained in the AUX, as the AUX appears in the Imperfect Finite. (We have already concluded that the Imperfect Finite does not have a Tense morpheme.) It cannot be incorporated in the main verb either, as the main verb is marked for Gender and Number only, just like the main verbs of all other Serbo-Croat compound finite forms.

Conclusions:

The Pluperfect Finite is not marked for Tense.
The Pluperfect Finite is used with main verbs of either Aspect value, but the AUX must be marked for the imperfective Aspect.
The Pluperfect Finite describes a past action that precedes another past action (background action).

Table 2.8. The properties of the Pluperfect Finite

Main verb is allowed either Aspect value, imperfective AUX.
Denotes action completed before another past action.
Compound finite form.
Composition: AUX - Imperfect Finite of *biti* 'to be'+P2+N
                MV - perfective/imperfective l-participle+G+N

The Pluperfect Finite can be entirely replaced by the Past Perfect Finite form and still preserve its temporal properties. The Past Perfect Finite can replace any Past Finite form (the Aorist, the Imperfect or the Pluperfect Finite). This should imply that, in addition to being able to replace the Pluperfect Finite form as a whole, it should also be able to replace only the AUX., which appears in the Imperfect Finite form. Thus, the Pluperfect Finite can:

EITHER appear in its proper form, given above
OR, it can be entirely replaced by the Past Perfect Finite
OR, only its Imperfect part is replaced by the Past Finite, giving us a two-element form:
      AUX – Past Perfect Finite of *biti* 'to be': imperfective *biti* 'to be'+P1+N
                                         imperfective *biti* 'to be' l-participle+G+N
      MV - perfective/imperfective l-participle+G+N.

2.5. The Past Perfect Finite

Like any other Serbo-Croat finite form, the Past Perfect Finite views action relative to the moment of speech. The action in the Past Perfect Finite precedes the speech moment and, if it precedes the speech moment, it must be past in relation to this moment.[44] Like the Pluperfect Finite, the Past Perfect Finite applies to both perfectives and imperfectives but needs an imperfective AUX.

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[44] Comrie (1985), page 42:
" In Russian, for instance, the perfective past will necessarily indicate that the situation in question is completed, since use of perfective aspect and past tense locates the whole situation in past time, e.g. *Kolja procital etu knigu* 'Kolya has read this book'. Of course, at best this indicates that the situation of Kolya's reading the book referred to has terminated..."

Structurally, the Past Perfect form differs from the Pluperfect form as it uses the Primary set of Person markers for its AUX (P1+N), while the Pluperfect uses the Secondary set (P2+N). The Past Perfect Finite form is composed of:

the Present Finite form (P1+N) of the imperfective AUX *biti* 'to be', and
the l-participle of the MV, inflected for Gender+Number.

The Imperfect and the Pluperfect Finite forms are becoming increasingly archaic and have already disappeared from some Serbo-Croat dialects. They are being replaced by the Past Perfect Finite form, also known as 'the all purpose Past Finite form' in the following sense: the Past Perfect Finite form is identical in meaning to the Aorist Finite if it takes a perfective main verb, or it is identical in meaning to the Imperfect Finite if it takes an imperfective main verb. It can also replace the Pluperfect Finite form (see the end of the preceding section on the Pluperfect Finite form).

Again, reasons for rejecting the existence of a Tense morpheme in the Past Perfect Finite form are many.

First, its AUX endings are composed of (P1+N), just like the Present Finite endings or the endings of the Future I Finite, or the endings of the Future II Finite. As these endings are used for four distinct finite forms, they cannot contain a specific Tense marker. On the other hand, its main verb appears in the l-participle form[45], marked for (G+N), just like a main verb of any other compound finite form: the Pluperfect, the Future II (compound version), Present Conditional Finite form and the Past Conditional Finite form. Therefore, an independent Tense morpheme cannot be contained in the main verb form either.

Second, anything that has been said for the behaviour of the earlier discussed finite forms in Indirect speech (preceding sections), applies to the Past Perfect Finite form as well. The interpretation of this finite form changes with the change of the finite form of the main clause predicate. This means that the Past Perfect Finite form can have any temporal interpretation as long as it is past in comparison to the main clause predicate.

In other words, in Indirect speech, the Past Perfect Finite form of the subordinate clause can even have a future interpretation, as long as the action of the main clause predicate temporally *follows* the predicate of the subordinate clause, as in (27c).

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[45] The l-participle is also known as the *verbal adjective*. Stanojčić and Popović (1994) explain that the verbal adjective is formed out of the infinitive stem and the following endings:

singular:	-*o* for masculine	plural:	-*li* for masculine
	-*la* for feminine		-*le* for feminine
	-*lo* for neuter		-*la* for neuter

Also, Schenker (1993), page 106: "The resultative participle (l-participle) indicated the result of a completed action. It was formed with the suffix –*l* added to the infinitive stem.... The resultative participle was regularly used in compound verbal categories (perfect, conditional) where it was accompanied by a finite form of the verb 'to be': *jesm nesl* 'I have carried', *bim /byx nesl* 'I would carry'..."

(27a) Ona <u>je rekla</u> [da [**je išla** u školu]].
　　　 She <u>said</u> [that she **had been going** to school.]

(27b) Ona <u>kaže</u> [da [**je išla** u školu]].
　　　 She <u>says</u> [that [she **was going** to school]].　　　　　or
　　　 She <u>says</u> [that [she **had been going** to school]].

(27c) Ona <u>će reći</u> [da [**je išla** u školu]].
　　　 She <u>will say</u> [that [she **is going** to school]].　　　or
　　　 She <u>will say</u> [that [she **was going** to school]].　　　or
　　　 She <u>will say</u> [that [she **had been going** to school]].
　　　 She <u>will say</u> [that [she **will go** to school...]].　　(*will go* happens <u>before</u> *will say*)

Conclusions:

The Past Finite is not marked for Tense.
Its main verb can have either Aspect, but its AUX must be imperfective.
The Past Finite replaces any past action the Aorist, the Imperfect and the Pluperfect.

<u>Table 2.9. The properties of the Past Perfect Finite</u>

Main verb with any Aspect, imperfective AUX.
Completed before the moment of speech and therefore past.
Compound finite form.
Composition: AUX – Present (imprf) Finite of *biti* 'to be'+P1+N
　　　　　　　　 MV - perfective/imperfective l-participle+G+N

2.6. The Future I Finite

The Future I Finite form refers to an action that follows the moment of speech, regardless of its duration, and regardless of where the actual moment of speech is placed in time. It is generally assumed[46] that the Future I Finite is a compound form, composed of:

AUX: the Present Finite form of the verb *htjeti* 'to want' and
MV: Infinitive.

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[46] Barić, Lončarić, Malić, Pavešić, Peti, Zečević and M. Znika. (1995), page 241. state that the Future I is formed of the Present finite form of the AUX verb *biti* 'to be' and the main verb in the Infinitive. They give the verb *pitati* 'to ask' as an example:
　　　　　　　 singular　　　　 plural:
　　　　　　　 1. ću pitati　　　　 1. ćemo pitati
　　　　　　　 2. ćes pitati　　　　 2. ćete pitati
　　　　　　　 3. će pitati　　　　 3. će pitati
If the main verb precedes the AUX verb. there are three possibilities:
a)　 the main verb keeps its form (i.e. 1st singular: *pitati ću*). principally in poetry:
b)　 the Infinitive loses the *–i* of the Infinitive marker (i.e. 1st singular: *pitat ću*)
c)　 the Infinitive loses the Infinitive marker and the AUX is added to it as a suffix (i.e. 1st sg: *pitaću*)

Notice that every other Serbo-Croat compound finite form chooses the verb *biti* 'to be' for its AUX. Why is the Future I the only compound finite form that chooses a different verb for its AUX - the verb *htjeti* 'to want'? Also, recall that main verbs of all other compound finite forms have the same structure: they are all the l-participles inflected for Gender and Number. Why is the main verb of the Future I in the Infinitive?

(28) Marija **će**   **kupiti**   knjigu.
         Maria   *want-clitic-+P1+N*   *buy-Infinitive*   *book.*
         (Maria will buy a book.)

The first component of the Future I Finite is its AUX *htjeti* 'to want' in the Present Finite.

Table 2.10. The Present Finite forms of the verb *htjeti* 'to want'

singular	plural
1. hoće+u = hoću	1. hoće+mo
2. hoće+š	2. hoće+te
3. hoće+∅	3. hoće+∅

Full forms: *hoću, hoćeš, hoće, hoćemo, hoćete, hoće.*
Clitic forms: *ću, ćeš, će, ćemo, ćete, će.*

The verb *htjeti* 'to want' is always analysed as having two equivalent forms: full and clitic. The choice is seen as being determined purely by the Serbo-Croat 'second position clitic rule'[47]. However, the full form of this verb invariably results in the predicate being interpreted as present, while the clitic form of this verb is always interpreted as future:

(29) Marija **hoće**   kupiti   knjigu.
         Maria   *want-full+P1+N*   *buy*   *book.*
         (Maria wants to buy a book.)

(30) Marija **će**   kupiti   knjigu.
         Maria   *want-clitic-+P1+N*   *buy*   *book.*
         Maria will buy a book.

Proto-Indo-European did not have a specific form for future[48]. The only distinction was the one between past and non-past, where non-past included both present and future. In the stage of Late Proto-Indo-European, future was communicated through the Present form endings, but only perfective verbs were allowed[49].

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[47] Please refer to the Introduction, page 1.

[48] Schenker (1993), page 94:"...The future was originally expressed through the modalities of the subjunctive and optative..."

[49] Schenker (1993), page 95:"...The perfective present assumed the function of future, leaving the imperfective present as the sole indicator of contemporaneity with the moment of speech. Consequently, since the Proto-Slavonic present-tense forms referred to either present or the future, they may be viewed as non-past and are often so termed..."

Thus, the Present Finite inflection (P1+N) on an imperfective verb denoted a present action, while the Present Finite inflection on a perfective verb denoted a future action. Proto-Slavonic signalled future through the Infinitive of the main verb, preceded by one of the following verbs in the Present Finite Form[50]: *biti* 'to be', *imati* 'to have', *htjeti* 'to want', *poceti* 'to begin', of which only the verb *htjeti* 'to want' is still used for the same purpose today. 'To want something to happen' means that it has not happened yet, but one hopes that it might happen in the future. This is the logic behind the use of this verb as a way of communicating future.

Now, why is it that, in Modern Serbo-Croat, the clitic form of this verb is interpreted as future, while the full form is understood as present? First, the difference between the full and the clitic form of a verb is in the fact that the full form consists of the verb root, which is the part carrying its semantics, while the clitic form is composed mainly out of an inflection. The presence of the semantic part in the full form forces the semantics of the verb to be taken into consideration in the overall interpretation of the sentence. The verb is understood to be the main verb and any other optional verb within the same string would then be computed as a main verb of a subordinate clause. The Present interpretation:

(31) The **full** form of the verb *htjeti* 'to want'   +   [Infinitive clause] as a direct object
    Ja **hoću** [PRO kupiti kuću].
    (I **want**   [PRO to-buy a house].)

The second verb is optional and acts as a clausal complement. It is possible to have an NP complement instead:

(32) The **full** form of the verb *htjeti* 'to want'   +   NP as a direct object
    Ja **hoću** kuću.
    (I **want** a house.)

On the other hand, the clitic form contains mainly an inflection (P1+N) and its semantic value is reduced. In this case, the second verb in the sentence is not optional, but obligatory. This ensures that the semantics of the clitic verb *htjeti* 'to want' is ignored and that the emphasis is on the semantics of the following verb. The future interpretation:

(33) The **clitic** form of the verb *htjeti* 'to want'   +   [Infinitive clause] as a direct object
    Ja **ću** [PRO **kupiti** kuću].
    (I **will buy** a house.)

Contrary to the present interpretation, the future interpretation requires the second verb.

(34) *The **clitic** form of the verb *htjeti* 'to want'   +   NP as a direct object
   *Ja **ću** kuću.
    (I **want** a house.)

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[50] Schenker (1993). page 95:"...A Proto-Slavonic innovation was the imperfective future expressed in the infinitive plus the present-tense forms of one of the Auxiliary verbs: 'to be', 'to have', 'to want' and 'to begin'.

In Proto-Slavonic, the future was only described through the Present Finite form of four chosen verbs whose semantics seemed the most appropriate for the purpose[51]. Next, only one of the four verbs, the modal verb *htjeti* 'to want' kept this function. Then, the use of the clitic forms of this verb separated from its full forms as the only way to signal that it is the semantics of a different verb that should be considered in the sentence computation. And now the most interesting development. Remember that the clitics have to be preceded by lexical material, placing them into the clause second position. The AUX clitic, thus, is usually preceded by an overt subject, as in:

(35)

IP
　I　　IP
Spec
　I

Ja　　　ću　　　　　[PRO **kupiti** kuću].
I　　*will-clitic*　　*[PRO buy　house]*.
(I will buy a house.)

However, this is not the only way of providing clitic support. In Serbo-Croat, it is possible for the main verb to move outside the VP, across the AUX (another Head), and Head-adjoin it, as in:

(36)

IP　　　I'
　　　　　IP
Spec
　I

pro　　**Kupiti**ᵢ ću　　　[PRO tᵢ kuću].
　　　buy　will-clitic　　*[PRO tᵢ house]*.
(I will buy a house.)

This move has clitic support as the sole purpose and in no way alters any other syntactic or semantic values of the clause. But most dialects go a step further. The main verb loses its Infinitive marker *-ti* and the clitic *htjeti* 'to want' attaches to it as inflection!

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[51] Comrie (1985), page 43:
" However, there is a sense in which the future is clearly different from the past. The past subsumes what may have already taken place and, barring science fiction, is immutable, beyond the control of our present actions. The future, however, is necessarily more speculative, in that any prediction we make about the future might be changed by intervening events, including our own conscious intervention. Thus, in a very real sense the past is more definite that the future. Following on from this, one might argue that while the difference between past and present is indeed one of tense, that between future on the one hand and past and present on the other should be treated as a difference of mood rather than one of tense."

(37) **Kupi+ću** [PRO t₁ kuću].
    Kupićú [PRO t₁ kuću].
    Buy+will *[PRO* t₁ *house].*
    (I will buy a house.)

This is still only possible with the clitic support scenario. When an overt subject is present, the main verb remains within the VP and the AUX dominates it. But it is not unreasonable to expect that the dialects that allow this incorporation (and the majority of them do) are a step further in the development of their systems of finite forms. One is led to assume that this will eventually result in the clitic *htjeti* 'to want' losing its AUX role and becoming an independent inflection for the formation of the independent Future I Finite Form.

As with other Serbo-Croat finite forms, the interpretation of the Future I in Indirect Speech is dependent on the temporal interpretation of the main clause predicate, which further confirms the absence of Tense morphology:

(38a) Ona je rekla [da [ćé ići u skolu]].
    She said [that [she **would be going** to school.]]
    She said [that [she **was going** to school.]]

(38b) Ona kaže [da [ćé ići u skolu]].
    She says [that [she **will be going** to school]].   or

(38c) Ona će reći [da [ćé ići u skolu]].
    She will say [that [she **will be going** to school]].

The fact that the choice of full vs. clitic form is strict and controlled, that the clitic form cannot take an NP complement, that the clitic form may act as pure inflection and incorporate with the main verb (Long Verb Movement) all suggest that the clitic form (in the Present Finite Form) is becoming an independent AUX for the formation of the Future I Finite.

On the other hand, the fact that the full (present) and the clitic (future) verb *htjeti* 'to want' is still the same verb with the same inflection, the fact that it is still not a unit with the main verb as the main verb is in fact an Infinitive clause (Uninflected or Inflected), the fact that the actual feature composition of the two forms (we shall see later) are absolutely identical, all suggest that the Future I Finite is nothing but the Present Finite.

Both finite forms use the same markers (P1+N). Only imperfective verbs are allowed into the Present Finite. Both perfective and imperfective verbs qualify for the Future Finite form but, again an imperfective *htjeti* 'to want' is obligatory. The assumption that the Future Finite in Serbo-Croat is nothing but the Present Finite of the verb *htjeti* 'to want' could even be applied to the history of English. The AUX verbs used for the English Future Tense are the modal verbs 'will' and 'shall'. The AUX verbs used for the English Future Tense are also different from the AUX verbs used for the English past and present Tenses (which use 'be' and 'have').

Following this line of thinking, we then must say that, in both Serbo-Croat and English, the Present Finite and the Present Tense, respectively, of any verb that describes an action that is not happening right now but may or not happen in the future, has the same temporal interpretation as what is taken to be the Future form with the AUX *htjeti* 'to want' or 'will'/'shall'. Thus, temporally, all the following sentences are identical:

(39) English:

It will rain (tomorrow).
It would rain (tomorrow).
It shall rain (tomorrow).
It should rain (tomorrow).
It may rain (tomorrow).
It might rain (tomorrow).
It could rain (tomorrow).
It ought to rain (tomorrow).
You must be back by tomorrow.
You need (to) be back by tomorrow.
You dare be back tomorrow.

(40) Serbo-Croat:

Sutra će padati kiša.
Sutra treba padati kiša.
Sutra može padati kiša.
Sutra bi trebala padati kiša.
Sutra bi mogla padati kiša.
Moraš se vratiti do sutra.
Trebaš se vratiti do sutra.
Samo se usudi doći sutra!

This would lead one to conclude that an independent future form exists in neither English nor Serbo-Croat, but that in both languages, future is communicated through the modalities of the Present form in Serbo-Croat, or the Present and Past ('would' and 'could') forms in English.

The 'back shift' in English Indirect speech may be taken to support the above assumption. As already mentioned, the temporal properties of subordinate clauses in English Indirect Speech are viewed from the point of view of the original speaker and not the one that reports the original utterance. Consider the following English sentence in Direct Speech:

(41) I live in London.

The corresponding Indirect Speech example in the Present Tense would be:

(42) Sandra says [that [she lives in London]].

In the Direct Speech example, Sandra is saying *now* that she lives in London. In the Indirect Speech example, the original utterance is also being reported *now*. In both cases, the original speaker is making her statement in the present time, so there is no difference in the temporal properties of the original clause and the temporal properties of the reported (subordinate) clause.

But if one is reporting a statement that was made in the past, then only the viewpoint of the original speaker is taken into consideration and the temporal properties of the reported clause are 'shifted' into the past.

(43) Sandra <u>said</u> [that [she <u>lived</u> in London]].

The original speaker (Sandra) lived in London at the time when she made this statement. Following the same pattern, if the verb of the main clause is in the Future Tense, one expects an obligatory 'future shift', where the temporal properties of the subordinate clause verb would be 'shifted' into the future. However, this is not what happens:

(44) Sandra <u>will say</u> [that [she <u>lives</u> in London]].

Here the temporal properties of the subordinate clause remain unchanged, just like in the examples where the main clause verb is in the Present Tense. Thus, at least for the purpose of English Indirect Speech, the Present and the Future Tense are treated as the same.

Conclusions:

The Future I Finite is not marked for Tense.
The Future I Finite applies to main verbs of either Aspect, but the AUX is an imperfective verb.
The Future I Finite describes an action that follows the moment of speech.

Table 2.11. The properties of the Future I Finite

Main verb in any Aspect.
An action that follows the moment of speech.
Compound form.
Composition: Present Finite form of *htjeti* 'to want'+P1+N.
          Infinitive clause.

2.7. The Future II Finite

The Future II Finite is used in conditional clauses (*If I go there,...*) to denote a future possibility that precedes another future action (given in the Future I Finite). In its simple form, the Future II Finite has the same inflection as the Present Finite.

The difference between the Present Finite form and the Future II Finite form is the fact that only imperfective verbs are interpreted as the Present (recall the A forms), while perfective verbs with the same inflection are interpreted as the Future II (the B forms). Aspect plays a crucial role here.

Imperfective verb+P1+N - the Present interpretation
Perfective verb   +P1+N - the Future II interpretation

Consider the imperfective verb *piti* 'to drink' and
the perfective verb *popiti* 'to drink up', *po-* being a perfective prefix:

(45a) Moji drugovi **piju** vino.
  Imperfective verb+(P1+N) → Present Tense interpretation
  (My friends **drink /are drinking** wine.)

(45b) *Moji drugovi **popiju** vino.
  **Perfective verb+(P1+N) → Present Tense interpretation*
  (*My friends **drink up** wine.)

(45c) *Ako moji drugovi **piju** vino.
  **Imperfective verb+(P1+N) → Future II interpretation*
  (*If my friends **drink /are drinking** wine.)

(45d) Ako moji drugovi **popiju** vino, ...
  Perfective verb+(P1+N) → Future II interpretation
  (If my friends **drink up** the wine, then...)

Recall that the only way that perfective verbs can have a Present Finite interpretation is if they are accompanied by a time adverbial that suggests a repetition of a perfective action, or if an imperfective suffix is added to them. Either way, they are not perfective anymore, but imperfective:

(46) Perfective verb+repetition → Present interpretation
  Moji drugovi **popiju** vino kad god ga nadu u frižideru.
  (My friends **drink up** the wine, whenever they find it in the fridge.)

Similarly, the only way that imperfective verbs can have a Future II interpretation is if they are accompanied by the AUX *biti* 'to be' in its perfective form[52]. The Future II is primarily a simple form made up of perfective verbs only. To allow imperfectives in, it is necessary to introduce a perfective AUX, and make it a compound form. For this, the perfective stem of the verb *biti* 'to be', the stem *bude-* is needed:

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[52] Recall that the verb *biti* 'to be' has three Aspectually different stems:
  Present stem 1. *jes-*. is imperfective.
  Present stem 2. *bude-*. is perfective.
  Infinitive stem (stem 3). *bi*. is bi-Aspectual.

Table 2.12. The perfective stem of the verb _biti_ 'to be' (_bude-_) with the Present endings

singular	plural
1. bude+m	1. bude+mo
2. bude+š̆	2. bude+te
3. bude+∅	3. bud +u

This verb now acts as an AUX, while the imperfective verb is the main verb:

(47) Ako **budem pila**...
   If be-perfective – 1stsing drink-imperfective+fem+sing...
   perfective AUX (P1+N) + imperfective MV (G+N) → the Future II Finite
   (If I drink...)

Perfective verbs do not need an AUX in an if-clause:

(48) Ako **popijem**...
   If drink-imperfective+1stsing...
   perfective verb (P1+N) → the Future II Finite
   (If I drink up...)

However, by analogy, it is possible for perfective verbs to appear with an AUX, probably a tendency to make it a uniform structure:

(49) Ako **budem popila**...
   If be-perfective+1stsing drink-perfective+fem+sing...
   perfective AUX (P1+N) + perfective MV (G+N) → the Future II Finite
   (If I drink up...)

In its simple form, the inflection of the Future II Finite is identical to that of the Present Finite (P1+N). In its complex form, the AUX verb has the Present Finite form (P1+N) and, as such, it can not contain a Future II Tense marker. The main verb has the same form as in any other compound finite form (verbal adjective, l-participle, + G+N), thus it cannot be marked for Tense either. The Future II Finite form is found in conditional clauses. Its simple form can also be interpreted as the Present, if it appears with certain time adverbials (see the B forms in the section on the Present Finite), or as an Inflected Infinitive. These are all strong indications that this form, as well as all the other Serbo-Croat finite forms, lacks an independent Tense morpheme.

Conclusions:

The Future II Finite is not marked for Tense.
The Future II Finite is used with perfective verbs. An imperfective verb may be interpreted as Future II only if accompanied by the perfective AUX _biti_ 'to be'.
The Future II Finite is found in conditional clauses to describe a future possibility that is followed by a Future I action.

Table 2.13. The properties of the Future II Finite

Perfective verbs.
Denotes an open possibility that precedes another future action.
Simple or compound form.
Composition: perfective verb+P1+N
      or: AUX - perfective *biti* 'to be'+P1+N
         MV - perfective/imperfective l-participle+G+N.

2.8. The Present Conditional Finite

The Present Conditional Finite is also used in conditional sentences (*If I had a car, I would drive to work...*) to denote an unfulfilled present possibility. This is a complex form, consisting of the AUX *biti* 'to be' in the Aorist Finite (therefore a perfective AUX) and the l- participle (verbal adjective) of the main verb inflected for Gender and Number. A special 'Present Conditional Tense marker' cannot be contained in the AUX as the AUX has the Aorist Finite Form. It cannot be contained in the main verb either as the main verb in this form is identical to the main verbs in any other compound finite form.

(50) Da je vrijeme lijepo, ja **bih išla** napolje...
   (If the weather was nice I **would go** out...)

Conclusions:

The Present Conditional Finite is not marked for Tense.
The Present Conditional Finite is used with both perfective and imperfective verbs, but requires a perfective AUX.
The Present Conditional Finite is found in conditional clauses to describe an unfulfilled present possibility.

Table 2.14. The properties of the Present Conditional Finite

Main verb in either Aspect.
Denotes an unfulfilled present possibility.
Compound form.
Composition: AUX - perfective *biti* 'to be' +P2+N
       MV - perfect/imperfect l-participle +G+N.

2.8. The Past Conditional Finite

The Past Conditional Finite is also used in conditional clauses (*If I had had a car, I would have driven to work...*) to denote an unfulfilled past possibility.

This also is a complex form, consisting of the AUX verb *biti* 'to be' in the Present Conditional Finite form (perfective AUX and the l-participle of the same verb) and the l-participle of the main verb inflected for Gender and Number.

A special 'Past Conditional Tense marker' cannot be contained in the AUX as the AUX has the Present Conditional Finite Form. It cannot be contained in the main verb either as the main verb in this form is identical to the main verbs in any other compound finite form.

(51) Da je vrijeme bilo lijepo, ja **bih bila išla** napolje...
    (If the weather had been nice I **would have gone** out...)

Conclusions:

The Past Conditional Finite is not marked for Tense.
The Past Conditional Finite is used with both perfective and imperfective verbs, but requires a perfective AUX.
The Past Conditional Finite is found in conditional sentences to describe an unfulfilled past possibility.

Table 2.15. The properties of the Past Conditional Finite

The Past Conditional Finite is not marked for Tense.
The Past Conditional Finite is used with both perfective and imperfective verbs, but requires a perfective AUX.
The Past Conditional Finite is found in conditional clauses to describe an unfulfilled past possibility.

3) Temporal information in Serbo-Croat

Languages differ with respect to how accurately they are able to place actions in time. For example, the independent Tense and Aspect marking in English allow for a large number of precise verb forms.

On the other hand, the lack of Tense morphology in Slavic languages results in temporal marking being sometimes general (i.e. only one form, the Present Finite, covers present in Serbo-Croat, compared to the following four forms in English: the Simple Present, the Present Perfect, the Present Continuous, the Present Perfect Continuous)[53]. We have now come up with a small list of factors that seem to definitely affect the temporal interpretation in Serbo-Croat:

- The choice of Person and Number cluster (Primary or Secondary; i.e. 2.1. and 2.2.)
> (the only way of distinguishing between Present and Imperfect)

- Gender and Number markers,
> (the G+N cluster is obligatory whenever it appears, but the clue to
> whether it has anything to do with Tense or not is not obvious yet.)

- Aspect (the only way to distinguish between: Aorist and Imperfect,
> Present and Future II,
> Past and Future II).

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[53] Comrie (1985), page 7:

"The idea of locating situations in time is a purely conceptual notion, and is as such potentially independent of the range of distinctions made in any particular language. It does, however, seem to be the case that all human languages have ways of locating in time. They differ from one another, however, on two parameters. The first, and overall less interesting for our present purpose, is the degree of accuracy of temporal location that is achievable in different languages. The second, and more important, is the way in which situations are located in time, in particular the relative weight assigned to the lexicon and to the grammar in establishing location in time.

In modern technological societies, we are accustomed to very accurate specifications of time location and of other phenomena relating to time, so that not only has the time unit *second* become entrenched, but many members of the culture are at home in talking of much smaller stretches of time, such as nanoseconds. Given these possibilities, very fine distinctions in location of time are possible, and when the linguistic possibilities are combined with those of standard mathematical notation, an infinite degree of precision is in principle attainable. In many other cultures, however, such precision is not attainable, at least not by means other than direct borrowing of expressions from the languages of more technological cultures. Indeed, in some cultures, very little value is attached to precision in temporal location, so that in Yidiny, for example, it is impossible to distinguish lexically between the concepts of 'today' and 'now'. Although, in cultures where precise location in time is attainable, expressions can be created for such precise statements, it should be noted that such expressions do not impinge at all on the grammar of the language in question, rather they use the existing grammatical patterns, at best creating new lexical items (such as *nanosecond*), or even making use of existing lexical items and mathematical expressions in order to gain precision (e.g. 10 *seconds*). No language has grammatical devices to make such fine locations, and indeed the languages of the cultures that find it necessary to make such fine discriminations characteristically have a very small range of grammatical distinctions in this area: thus, in English, it is possible to locate a situation before the present moment (by using the past tense), and even to locate a further situation prior to that first situation (by using the pluperfect), but there is no way of quantifying grammatically the time lapse between the first and second situations, or between either of them and the present moment."

4. Summary

4.1. Consider the conclusions made so far:

1. None of the Serbo-Croat finite forms contain overt or non-overt Tense morphemes. Due to the lack of an independent Tense marker, the temporal relations of Serbo-Croat verbs do not seem to be clearly established. Consequently, this language concentrates on properties of an action and not on the moment in time to which this action may belong. A property of an action may result in a logical assumption, which would place the action at a particular point in time. For example, if an action is completed, it must be past; if it has started but it is not yet completed, it must be still going on, therefore it must be present, etc.

2. The finite forms that apply only to imperfective verbs or perfective verbs 'made' imperfective are:
the Present Finite and
the Imperfect Finite.

3. The finite forms that apply to perfective verbs only or imperfective verbs 'made' perfective are:
the Aorist Finite and
the Future II Finite.

4. The finite forms that apply to both verbal types, but insist on introducing an imperfective AUX are:
the Pluperfect Finite,
the Past Perfect Finite,
Past Conditional Finite.

5. The finite forms that can apply to both verbal types, but insist on introducing a perfective AUX are:
the Future II and
the Present Conditional Finite.

6. Only the finite forms that allow both perfective and imperfective verbs are complex and must have an AUX. The Aspect of the AUX is always strictly specified. In simple finite forms, the Aspect of the verb is never optional and the AUX is not needed.

7. Serbo-Croat actions are viewed with reference to the moment of speech, not the absolute time. In complex sentences (those with subordinate clauses, indirect speech, etc) the moment of speech is specified by the main clause verb. The Present Finite form is used for any action simultaneous with the moment of speech, regardless whether the speech moment in question is in past, present or future. This means that almost any finite form can have almost any temporal interpretation.

8. The Present Finite and the Future II Finite can appear in tenseless (Infinitival) clauses.

9. The Past Perfect Finite can replace the Aorist, the Imperfect and the Pluperfect Finite.

10. The Person and Number markers are obligatory in all finite forms.

11. The Gender morpheme appears in the Pluperfect, the Past (Perfect), the Present Conditional and the Past Conditional Finite forms.

12. The factors that vary from one finite form to another and influence temporal interpretation are:
Aspect of the main verb in simple forms: perfective or imperfective,
Aspect of the AUX in compound forms: perfective or imperfective,
Choice of Person and Number markers: Primary or Secondary (P1/P2),
Presence/absence of Gender and Number markers (G+N).

To summarise, here are the properties of each particular finite form. For convenience, the Primary Person and Number markers are referred to as P1+N. Similarly, the Secondary Person and Number markers are written as P2+N. The tables below are not to be understood as theoretical models of any kind, but simply as a list of properties of the finite forms which they describe.

The left-hand side of each table lists the four areas of possible differences of the forms:
the Aspect of the main verb (perfective or imperfective),
the Aspect of the AUX (perfective or imperfective),
the type of the Person and Number cluster (Primary or Secondary, P1/P2),
whether the form contains the Gender and Number cluster (yes or no).

The right-hand side of each table specifies the values of the areas given on the left-hand side. They are separated by the '=' sign. If no information is given after the '=' sign, this means that the area in question does not apply to that particular finite form (i.e. 'AUX Aspect' in the Present Finite, since the Present Finite does not have an AUX verb).

Table 2.16. Properties of Serbo-Croat finite forms

The Present Finite form

The group 'A' verbs (please see 2.2.)

MV	Aspect	=	**impfv**
AUX	Aspect	=	
P + N		=	**P1 + N**
G + N		=	

The group 'C' verbs (please see 2.2.)

```
MV    Aspect  =  perf + impfv
AUX   Aspect  =
P + N         =  P1 + N
G + N         =
```

The Aorist Finite form

```
MV    Aspect  =  pfv
AUX   Aspect  =
P + N         =  P2 + N
G + N         =
```

The Imperfect Finite form

```
MV    Aspect  =  impfv
AUX   Aspect  =
P + N         =  P2 + N
G + N         =
```

The Pluperfect Finite form

```
MV    Aspect  =  any
AUX   Aspect  =  impfv
P + N         =  P2 + N
G + N         =  (G + N) x 2
```

The Past Perfect Finite form

```
MV    Aspect  =  any
AUX   Aspect  =  impfv
P + N         =  P1 + N
G + N         =  G + N
```

The Future I Finite form

```
MV    Aspect  =  any
AUX   Aspect  =  impfv
P + N         =  P1 + N
G + N         =
```

The Future II Finite form

```
MV    Aspect  =  any
AUX   Aspect  =  pfv
P + N         =  P1 + N
G + N         =  G + N
```

The Present Conditional Finite form

```
MV    Aspect  =  any
AUX   Aspect  =  pfv
P + N         =  P2 + N
G + N         =  G + N
```

The Past Conditional Finite form

```
MV    Aspect  =  any
AUX   Aspect  =  impfv
P + N         =  P2 + N
G + N         =  (G + N) x 2
```

4.2. The following questions need to be addressed now:

Why do Serbo-Croat finite forms place such an emphasis on the Aspectual properties of individual verbs?

If Serbo-Croat finite forms are not marked for Tense, how is the notion of Tense computed in this language?

What is the significance of the Agreement markers in this language? Why are Person and Number obligatory in every finite form and Gender in only some of them and what role do they play in the syntax of Serbo-Croat?

How is it possible that Serbo-Croat Infinitive Clauses can be inflected for Person and Number?

If a Tense Head is absent from this language, how is the Nominative Case assigned?
If a Tense Head is absent in Serbo-Croat, then Serbo-Croat does not project Tense. Does this make the VP the highest phrase or is it dominated by some other projection?

What is the Serbo-Croat clausal structure?

What is the feature specification of relevant lexical items?

These and other related issues will have to be examined. We start by looking into Aspect in the following Chapter.

III ASPECT

1) Introduction
2) Historical development of Aspect from Proto-Indo-European
3) Role of Aspect today
4) Other Slavic languages
5) Non-Slavic languages
6) Summary

1) Introduction

The conclusion of the preceding section was that Serbo-Croat finite forms lack Tense markers, overt or non-overt, and that temporal interpretation in this language depends on Aspect and Agreement properties of any given verb form. As a result, the choice of Aspectual properties of a predicate is determined by whatever temporal information this predicate is intended to communicate. This may suggest that, in languages with Tense morphology, for example English, there should be no restrictions on the appearance of either Aspect value[54] (perfective or imperfective) in any English Tense form. For example, the English Present Tense may have the following forms:

(52a) Present Tense	*I work.*
(52b) Present Continuous Tense	*I am working.*
(52c) Present Perfect Tense	*I have worked.*
(52d) Present Perfect Continuous Tense	*I have been working.*

Serbo-Croat lacks an independent Tense morpheme and relies on Aspect for temporal marking. Thus, present is marked by imperfective verbs (in addition to the Primary set of Person and Number markers) and perfective Aspect is incompatible with the notion of present action. Therefore, Serbo-Croat has only one present finite form (compared to the four possibilities in English, above):

(53a) *Present Finite	impossible as a bi-Aspectual form.
(53b) Present Continuous Finite	Ja pišem.
	*I write-**imperf**+1ˢᵗsg.*
	(I write./I am writing.)
(53c) *Present Perfect Finite	impossible.
(53d) *Present Perfect Continuous Finite	impossible.

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[54] Comrie (1976), page 16: "...perfectivity indicates the view of a situation as a single whole, without distinction of the various separate phases that make up that situation; while the imperfective pays essential attention to the internal structure of the situation...."

Combining either Aspect (perfective and imperfective) with any finite form, which is so freely allowed in English, is not possible in Serbo-Croat and similar languages. Serbo-Croat, we have seen, imposes strict restrictions on the Aspectual value of a verb, according to what particular temporal information this verb denotes.

Recall that there is a link between the imperfective Aspect and:
Present Finite,
Future I Finite,
Imperfect Finite,
Past Finite and
Pluperfect Finite,

while the perfective Aspect is characteristic for:
Aorist Finite,
Present Conditional,
Past Conditional.

In this section, we shall first examine Aspect from the early Proto-Indo-European times and follow its development in Slavic languages through the centuries up to modern times. The system of finite forms of the ancestor of today's Indo-European languages consisted of only two finite forms, the Present and the Past, and the only difference between the two was Aspect – and nothing else.

In the later stage, this finite system slowly started to develop. To describe more properties of an action, Proto-Slavonic introduced perfectives into non-past, and imperfectives into past. Past and non-past were now distinguished through two different sets of Person and Number markers (in addition to Aspect markers).

A closer look into the rest of the Slavic languages unveils the evidence that not only confirms the above, but also shows that the finite systems of the entire Slavic group are more or less the same. With minor differences, they all display the same main characteristics argued for in this thesis.

Finally, we shall see that it is not only the Slavic group that lacks Tense markers, but that this is also true for Arabic and some African languages. Even more interesting is the fact that the temporal interpretation in both Arabic and African tenseless languages is solved in the same way as in the Slavic group – through the restricted use of Aspect.

As Arabic and African and Slavic languages not only belong to different language groups, but also to different language families, one is justified in claiming that the link between Aspect and temporal marking in tenseless languages should be taken to be universal.

2) Historical development of Aspect
from Proto-Indo-European[55]

2.1. Proto-Indo-European

The system of finite forms in Proto-Indo-European eventually included the Present Finite, the Aorist Finite and the Perfect Finite and appears to have had much more to do with the Aspectual characteristics of an action than with the temporal relations[56]. The Present Finite referred to an action that, at the moment of speech, was not completed, but still ongoing. Logically, only imperfective verbs were understood as present. The Aorist described an action which, at the moment of speech, was completed and therefore considered past. Only perfective verbs were used for the Aorist.

The Perfect stressed the present result of a past action, thus linking the other two finite forms. It consisted of an imperfective AUX (in other words, AUX in the Present Finite form) and the resultative participle (the l- participle) of the main verb.

Proto-Indo-European did not have a separate form for future. The future was communicated through the modalities of Subjunctive and Optative. Thus, Proto-Indo-European had only three forms: the Present (non-completed action, therefore ongoing, therefore present), the Aorist (completed action, therefore past) and the Perfect (result of a completed action). The differences between these forms had more to do with the manner of performance and the properties of an action than the temporal relations.

2.2. Proto-Slavonic

Proto-Indo-European disintegrated into the following language groups:

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[55] Schenker (1993).

[56] Schenker (1993), page 95:"…Aspectual meanings, inherent in the Proto-Indo-European tenses, developed into a new grammatical opposition of two aspects, the perfective, specifying a completed action, and the unmarked imperfective; they became an obligatory category of the Slavonic verb. This development led in turn to the rise of an intricate interplay between the aspects and tenses. Consequently, since the Proto-Slavonic present-tense forms referred either to the present or the future, they may be viewed as non-past and are often so termed. Among the preterite tenses, the opposition between the perfective and the imperfective aspects coincided largely with the old opposition between the aorist and the imperfect, leading to a gradual disappearance or reinterpretation of these tenses in the individual Slavonic languages. Proto-Slavonic developed its own perfect and pluperfect, formed analytically with the resultative participle and, respectively, the present or imperfect of the Auxiliary verb 'to be'. A proto-Slavonic innovation was the imperfective future expressed by the infinitive plus the present-tense forms of one of the auxiliary verbs: 'to be', 'to have', 'to want' or 'to begin'…."

Indic (Vedic, classical Sanscrit, many modern Indian languages),
Iranian (Avestan, Persian, northern Iranian languages),
Tocharian,
Anatolian (Hittite and some languages of Asia Minor),
Armenian,
Greek,
Albanian,
Italic (including classical Latin),
Celtic,
Germanic (medieval Gothic, Proto West Germanic and Old Norse),
Baltic (Lithuanian, Latvian, Old Prussian) and
Slavonic.

We leave all the other groups aside for the moment, and follow the consequent changes through Slavonic languages. Proto-Slavonic kept the three finite forms inherited from Proto-Indo-European (the Present, the Past, the Perfect), but made a few innovations. Imperfective verbs were still used to communicate present and perfective verbs to refer to past, but to allow the possibility of describing more properties of any given action, Proto-Slavonic allowed imperfectives into past and perfectives into non-past. In order to distinguish between past and non-past, another clue was needed. Aspect alone was not enough anymore, so two different sets of Person and Number markers are used for this purpose, the so-called Primary and the Secondary set. Those two types of Agreement clusters contain nothing else but Agreement information. Both the Primary and the Secondary set are found in both past and non-past finite forms.

Proto-Slavonic still viewed actions as either past or non-past and lacked an independent form for future. However, it invented its own, not one, but two ways of signalling future, which later, in Modern Serbo-Croat, developed into Future II and Future I. The first way of suggesting future was to allow perfective verbs to assume the form of the Present. Thus the imperfective Present meant a present action, while the perfective Present meant a future action (Future II today). The second way was using the imperfective Present to refer to future, by the use of four Present Finite verbs: *biti* 'to be', *imati* 'to have', *htjeti* 'to want' and *početi* 'to begin' and the Infinitive of the main verb. Modern Serbo-Croat communicates the Future I in the same way, but of all the above four verbs, only *htjeti* 'to want' is used for this purpose today (Future I).

Not only did Proto-Slavonic allow perfectives into the Present Finite form, in order to signal future, but it also allowed imperfectives into the past. This provided a way of stressing a duration or a repetition of a past action or a way of describing a background one of two past actions. In other words, Proto-Slavonic invented the Imperfect Finite form. The Perfect Finite emphasised a present result or a consequence of a past action, thus linking past with present, formed of the Present Finite form of the verb *biti* 'to be' and a participle of the main verb, just like the Perfect Finite in the modern Serbo-Croat. Moreover, it invented the Pluperfect, which signalled the earlier of two past actions. The Pluperfect was formed of the Imperfect of the verb *biti* 'to be' and the resultative participle (also called the l-participle) of the main verb – again, just like its present-day version.

3) Role of Aspect today

3.1. Slavic languages

In the previous part, we established that the Present Finite form was used for both present and future (in other words, for every finite form that is *not* past, hence the term non-past). On the other hand, the Aorist, the Imperfect, the Perfect and the Pluperfect were all past finite forms. The formation of finite forms now included the Primary set and the Secondary set of Person and Number markers. The entire Slavonic group distinguishes only between past and non-past and lacks Tense morphology. Again, all these languages seem to place great importance on Aspect. Within non-past, only imperfectives can signal present, while most of them seem to allow both the imperfective and the perfective Future[57].

In Serbo-Croat, Russian, Polish, Czech, etc., perfective non-past is always understood as future. They also allow the imperfective Future, the difference being the fact that the perfective Future (Future II) *precedes* and is completed before another ordinary imperfective future action (Future I). Thus, the natural link between perfectiveness and past is, in a way, preserved here as well: the perfective Future, the Future II, is seen as past if compared with the imperfective Future, the Future I, which follows it. For example, Czech allows both perfectives and imperfectives in the past, while in non-past, the different Aspect communicates different temporal information[58]:

Past:	Non-past:
(54a) šel = imperfective → Past	(54c) jdu = imperfective → Present
(54b) pošel = perfective → Past	(54d) pujdu = perfective → Future
The same happens in Russian:	Non-past:
	(55a) idu = imperfective → Present
	(55b) pojdu = perfective → Future
And the same in Serbo-Croat:	Non-past:
	(56a) idem = imperfective → Present
	(56b) podem = perfective → Future

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[57] Comrie (1976), page 66: " In languages where the basic tense distinction is between the past and non-past, we have strictly speaking not the possibility of a perfective present, but rather of a perfective non-past, i.e. of the perfective of the present-future. Since the present is primarily a tense of description, it is quite natural for the perfective non-past to have as one of its meanings that of a perfective future...."

[58] The Czech and Russian examples are taken from Comrie (1976), page 67.

Some Slavonic languages have both the perfective and the imperfective Future, like Serbo-Croat, Russian, etc., and some, like Czech, have the perfective Future only. But they all restrict the Present Finite to imperfective verbs only.

It has been mentioned earlier that, in some Slavic languages (Bulgarian, Serbo-Croat, etc.) the perfective Present is used as a 'narrative Present' to describe past events so that the story may sound more dynamic. In Serbo-Croat, Bulgarian, Russian, Georgian and many other languages, there is a strong tendency to use the perfective non-past (Future II) for this purpose. Serbo-Croat allows the Future I as well. In Russian, only the imperfective non-past (present) is used as a 'narrative non-past'. All languages allow mixing of both the perfective and the imperfective non-past, to correspond to the Aorist/Imperfect distinction in the past.

To make a brief summary, the relation between the Aspectual information and the temporal information in Serbo-Croat, Russian, Bulgarian, Polish, Czech and the rest of the languages from this group have many similar points. Within non-past, only imperfective verbs denote present, while the perfective non-past is invariably interpreted as future. The majority of them have developed the imperfective Future as well, but as a compound finite form which in fact is a version of the Present Finite form. Within the past, the imperfective/perfective opposition is allowed. Generally, perfectiveness implies completeness of the action and therefore the action is understood as past, or as the earlier one of two past/future actions.

3.2. Non-Slavic languages

In the world languages that have Aspect restrictions, it is past that most often allows both Aspects. Thus, in many Indo-European languages, the perfective/imperfective distinction exists only in past finite forms and there are no corresponding distinctions within non-past. This is certainly true for Slavic languages, to mention just two:

(57) Bulgarian: broix   (I counted)   brojax   (I was counting)
(58) Serbo-Croat: odoh   (I went)   odlazih   (I was going)

This holds for a number of non-Slavic languages as well, for example:

(59) Spanish: hablè   (I spoke)   hablaba   (I was speaking)
(60) Latin: veni   (I came)   veniebam   (I was coming)
(61) Georgian: (da)cere   (you wrote)   cerdi   (you were writing)[59]

These languages do not have two Aspectually different forms for present. Imperfective verbs are the only ones that can be used for the Present Finite. This makes sense as one can refer to a completed past action or to just one part of it, but not to a completed present action, as completed actions are automatically past.

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[59] All examples taken from Comrie (1976), page 71.

Thus, within past, it is possible to have both Aspects, without affecting the temporal information. Although grammatically different forms, both the Aorist (perfectives only) and the Imperfect (imperfectives only) denote past.

Within non-past, on the other hand, the change of Aspect results in a change of the temporal information: imperfectiveness = present, perfectiveness = future. Some languages, as we have just seen above, do have an imperfective Future, a relic of the ancient way of signalling future through the Present form from the times when perfective verbs were restricted to past only.

There is no morphological reason why the Aspectual distinction should be restricted to past only, as Aspect affixes can be physically attached to verbs in any finite form. The reason for the restriction is not morphological but semantic and it reflects the fact that, in languages that lack Tense markers, it is Aspect that regulates temporal identification. In the earliest stages of Proto-Indo-European, Aspect alone was all that was needed for temporal marking. After imperfectives were introduced into past, and perfectives into non-past, an extra help from the two sets of Agreement markers was needed.

Non-finite forms, as one would expect, are not subject to the Aspectual restriction: Infinitives (*nositi/prenositi* 'to carry'), Participles (*nosila/prenosila*), Passives (*nošen/prenošen* 'carried'), verbal adverbs (*noseći/prenoseći* '(by) carrying'), verbal nouns (*nošenje/prenošenje* 'carrying'), Imperatives (*nosi/prenosi* 'carry').

4) Other Slavic languages

For all Slavic languages (Bulgarian, Macedonian, Czech, Upper Sorbian, Lower Sorbian, Polish, Cassubian, Polabian, Russian, Slovak, Belorussian, Ukrainian...) it is true that:
1. Past is opposed to non-past.
2. They all lack Tense morphology.
3. Imperfective non-past denotes present.
4. Perfective non-past denotes future.
5. Imperfective Future requires a perfective AUX.
6. Past allows both Aspects.

Some of the above mentioned languages display minor differences.

Bulgarian

Bulgarian has two more past finite forms: The Past Future and the Past Future Perfect[60]. The Past Future (which does not exist in Serbo-Croat) is a past action which is future in relation to another past action that precedes it. It is composed of
- the Imperfect form of the verb 'to want' and
- an Inflected Infinitive Clause.

The Past Future Perfect is very rarely used and almost always replaced by the Past Future (above). It describes a past action that is future in respect of another past action, which precedes a third past action. It is formed of
- the Past Future form the verb 'to want' and
- the participle of the main verb, specified for Gender and Number.

Cassubian

The only difference that Cassubian displays is an alternative way of forming the Perfect Finite - it allows a non-overt AUX. The Cassubian Perfect Finite also allows the AUX 'to be' to be replaced with the AUX 'to have'[61].

Czech and Slovak

Both Czech and Slovak omit the AUX in the 3rd person of the Past Finite. Contrary to Czech, Slovak does not mark Gender in the plural forms of participles. The Pluperfect still exists but, as in the rest of these languages, it is becoming increasingly archaic[62].

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[60] Scatton (1993), pages 188-248.
[61] Stone (1993), pages 759-794.
[62] Short (1993), pages 455-532 and 533-592.

Belorussian

We have seen that the Aorist, the Imperfect and the Pluperfect are dying finite forms in the Slavic languages. In Belorussian they have disappeared completely[63]. We also know that the Perfect Finite is generally used as the 'all purpose Past Finite' that, in all the above languages, is gradually replacing these three forms. In Belorussian, not only has this process been completed, but also the Perfect Finite itself has rejected the AUX. Thus, the Belorussian Perfect (Past) Finite consists only of the participle specified for Gender (in the singular only) and Number. This finite form accommodates both Aspects. The only surviving Belorussian compound finite is the old Pluperfect, though slightly different. The Pluperfect in the above languages consists of
- the Imperfect form of the AUX and
- the main verb participle, specified for Gender.

Being the 'all purpose Past Finite', the Perfect (Past) Finite is able to replace any other past finite form. In the case of the Pluperfect, the Past Finite can generally replace either the whole Pluperfect Finite, or just the Imperfect Finite of the AUX. Recall that, in the latter case, the result is a three-element finite form (Chapter II, Section 2.4. page 46.). Serbo-Croat prefers to replace the entire Pluperfect with the Past Finite form, while Belorussian replaces just the AUX with the Past Finite. This finite form applies to perfective verbs only. It is used to describe a past action that precedes another past action. However, the first element (AUX - the Present Finite form of 'to be') is dropped, so that its Pluperfect form results in:
- two Participles ('to be' and the main verb),
both specified for Gender (in the singular only) and Number.

Ukrainian

With respect to finite forms, Ukrainian is similar to Belorussian. It has three finite forms only. The Aorist and the Imperfect are no longer used, and the Perfect (Past) Finite has lost its AUX here as well. The Imperfect was the first one to go (12th century), followed by the loss of the Aorist Finite (14th century) and finally, the AUX disappeared in the 17th century[64].

Just like in Belorussian, the non-past does not differ from the non-past of the rest of the Slavonic languages. The Imperfective non-past stands for present, the perfective non-past for future, while the imperfective Future requires a perfective AUX.

Past finite forms have all been replaced by the Perfect Finite. Belorussian has kept the Pluperfect to signal the earlier one of two past action, but in Ukrainian, the Pluperfect is optional. The first element of the compound finite forms is lost here as well, making the Perfect a simple finite form, consisting of the main verb participle, and the Pluperfect a two element finite form, consisting of the participle of the verb 'to be' and the main verb participle. Participles are marked for Gender (in the singular only) and Number.

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[63] Mayo (1993), pages 887-946.
[64] Shevelov (1993). pages 947-998.

5) Non-Slavic languages

5.1. African languages[65]

The issues discussed above are not restricted to the Slavic language group alone. A Tense marker is absent from Arabic and some African languages as well, and these languages also rely on Aspect for temporal marking. A number of African languages use only imperfectives for formation of the Present Finite. In the West African language Yoruba, non-stative verbs without a marker are perfective verbs. They are made imperfective through the marker '*n*'. Stative verbs are always imperfective and take no marker. In Igbo, the imperfective marker is '*na*' before the verb. Imperfective verbs are interpreted as present, perfective verbs are understood as past.

Present:
(62) Yoruba: ó fẹ́ owó (*He wants money.*) stative verb – always imperfective
(63) Igbo: ó còrò é gò (*He wants money.*) stative verb – always imperfective
(64) Yoruba: ó ń sisé (*He works/is working.*) non-stative verb – imperfective marker
(65) Igbo: ó nà àrú ọ́ rú (*He works/is working.*) non-stative verb – imperfective marker

Past:
(66) Yoruba: ó wá (*He came.*) non-stative verb
(67) Igbo: ọ́ byàrà (*He came.*) non-stative verb

These languages communicate the imperfective past through the Present form (imperfective verb) and an adverbial that refers to past, something like:

(68a) ó ń sisé l'ánǎ. (Yoruba), or
(68b) ó nà àrú ọ́ ru écí. (Igbo).
 (*He is working yesterday.*)

5.2. Arabic[66]

Arabic perfective verbs are given perfective and past meaning, while imperfectives are given imperfective and present meaning.

(69) **Jalasū** ʕala'l- bābi.
 perfective verb (bold)
 (They sat down at the door.)

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[65] Examples taken from Comrie (1976). page 83.
[66] Examples taken from Comrie (1976). pages 78-79.

(70) ʔallāhu **yaʕlamu** bi- ma taʕmalūna.
    imperfective verb (bold)
    God   he-know about what you-do
    (God knows what you are doing.)

Imperfective verbs can be interpreted as future. In the following example this is achieved on a purely pragmatic basis – the knowledge that Resurrection Day is a future day.

(71) Fa 'llāhu **yahkumu** bayna   –hum yawma 'l-qiyāmati.
    imperfective verb (bold)
    But God he-judge between them   day the resurrection
    (But God will judge between them on the Day of Resurrection.)

(72) ʔajiʔu   –ka ʔidā 'hmarra 'l- busru.
    imperfective (1st bold) perfective (2nd bold)
    I-come to-you when it-ripen the unripe-date
    (I shall come to you when the unripe date ripens/shall ripen.)

Isolated, an imperfective verb would be interpreted as present. The basic imperfective - perfective opposition is enough to mark the basic present – past distinction, but not enough to make a finer temporal reference. Here, the perfective verb action is still past when compared with the imperfective verb action. The only difference from the earlier examples is the fact that here we are dealing with relative Tenses.

So, the pairing of imperfectives with present and perfectives with past remains a general starting point. If an imperfective and a perfective verb are found in the same sentence, one expects the perfective action to precede the imperfective action, whatever relative Tenses they denote.

One of the methods of signalling future is to introduce an overt future time reference (a temporal clause as above, or a future time adverbial) in a sentence containing an imperfective verb. In temporal clauses, an imperfective verb denotes future. The perfective verb of the subordinate clause must denote an action that precedes the action of the imperfective verb of the main clause.

(73) ʔarsala **yuʕlimu**   –hu bi- ðālika.
    perfective (1st bold) imperfective (2nd bold)
    He-sent he-inform him about this
    (He sent someone to inform him about this.)

Now, we have seen that an imperfective primarily denotes present and that it can denote future in the presence of overt future time adverbials. We also know that perfective verbs denote past, thus we do not expect imperfectives to be able to denote past as well, *unless* there is a need to indicate an imperfective past action. In this case, as in the case of the future, a past adverbial is enough to give an imperfective verb a past meaning:

(74) Wa 'ttabaʿū mā tatlū ʿl- šayātīnuʿala mulki sulaymāna
    imperfective (1st bold) perfective (2nd bold)
    And they-follow what they-recite the demons in reign Solomon
    (And they followed what the demons used to recite in Solomon's reign.)

The use of Aspect in Arabic shows that the main distinction between imperfective and perfective verbs is neither purely Aspectual, nor purely temporal, but that the Aspect and temporal notions interact. Perfective verbs indicate relative past, while imperfective verbs indicate everything else (future and imperfective past) in the presence of an appropriate temporal adverbial. Alternatively, the Future Finite is specified by adding *sawfa* or the prefix *sa-* before the verb: *sawfa yaktubu*, or *sa-yaktubu* 'He will write'.

Another way of signalling an imperfective past is combining an imperfective main verb with a perfective AUX 'to be'.

(75) Kāna yaktubu.
    (He was writing/used to write.)

For a more detailed and more specific time reference, further strategies have to be applied. Thus, to indicate the Present Perfect Finite, a particle *qad* is used before perfective verbs.

(76) Qad kataba
    (He has written.)

For the Past Perfect Finite (past action that precedes another past action), Arabic uses the perfective form of the AUX 'to be' and a perfective main verb.

(77) Kana (qad) kata.
    (He had written.)

6) Summary

6.1. Conclusions

To summarise, the earliest way of temporal marking in the Proto-Indo-European language family, which includes English-type languages as well, was through Aspect. Perfective Aspect meant past, imperfective Aspect meant non-past and that included both present and future.

Through the centuries that followed, language groups formed and languages started to differentiate. Some of them, like English, invented and developed a Tense marker, some, like the entire Slavic group, did not.

Languages that remained tenseless allowed mixing of, up to that point incompatible, perfective Aspect with non-past and imperfective Aspect with past and introduced Agreement morphology into the formation of finite forms. Two different sets of Person and Number markers were used in order to allow a larger variety of finite forms..

With their minor differences, the finite systems of all Slavic languages are almost identical. They all lack a Tense marker and place Aspect restrictions on their finite forms, maintaining the perfective/imperfective distinction. Finite forms are either simple or compound. Events are viewed as either past or non-past and an independent Future Finite form does not exist. Future is expressed through the modalities of the Present Finite form. The simple finite forms convey Person and Number information, while the compound forms signal Gender as well. The Perfect Finite is generally used as the 'all purpose past finite' and it is gradually replacing other past finite forms. In Belorussian, not only has this process been completed, but also the Perfect Finite drops the AUX.

In the world languages that have Aspect restrictions, it is past that most often allows both Aspects. Thus, in many Indo-European languages, the perfective/imperfective distinction exists only in past finite forms. Apart from Slavic languages, this is evident in Spanish and Latin as well. Thus, within past, it is possible to have both Aspects, without changing the temporal information. Within non-past, on the other hand, a change of Aspect results in the change in the temporal interpretation: imperfectiveness = present, perfectiveness = future.

There is no morphological reason why the Aspectual distinction should be restricted to the past forms only, as the Aspect affixes can be physically attached to verbs in any finite form. The reason for the restriction is not a morphological but a semantic one and it reflects the fact that, in languages that lack Tense markers, it is Aspect that assumes a role of temporal marking. The non-finite forms, as one would expect, are not subject to the Aspectual restriction.

The issues discussed above are not restricted to the Slavic or European language groups alone. Arabic and a number of African languages do not have specific Tense markers. Yoruba, a West African language, for example, uses only imperfectives for the Present Finite. In this language, Aspect markers are responsible for both Aspectual and temporal marking. It is possible to communicate imperfective past, by combining past adverbials with imperfective verbs (which would otherwise denote present). Similarly, in Arabic, perfective verbs are interpreted with perfective and past meaning, while imperfectives are interpreted with imperfective and present meaning. Imperfective verbs can be interpreted as future, if combined with a future adverbial.

Tenseless languages start off by pairing of imperfectives with present and perfectives with past and they devise ways of making finer temporal reference. In Arabic, for example, if imperfectives and perfectives are found in the same sentence, one expects the perfective action to precede the imperfective action. One of the methods of signalling the future is to introduce an overt future time reference (a temporal clause as above, or a future time adverbial) in a sentence containing an imperfective verb. As in the case of the future, a past adverbial is enough to give an imperfective verb a past meaning. In temporal clauses, imperfective verbs denote future. Being perfective, the subordinate clause verb must denote an action that *precedes* the action of the imperfective verb of the main clause.

The use of Aspect in Arabic shows that the main distinction between imperfective and perfective verbs is neither purely Aspectual, nor purely temporal. Perfective verbs indicate relative past, while imperfective verbs indicate everything else (future and imperfective past) in the presence of an appropriate temporal adverbial.

6.2. The next step

We have seen that the Aspect opposition is a powerful tool in distinguishing between past and non-past, but rather limited if one wanted to make a more precise time reference. To enable a richer system of finite forms, Slavic languages introduce Agreement into the temporal marking.

In the following section, we investigate not only the role of Agreement as a temporal marker but we also address the issue of Nominative Case assignment in languages that lack the typical Nominative Case assigner – a Tense Head.

We also look into Infinitive clauses as a related issue.

IV AGREEMENT

1) Introduction
2) Types of Agreement Clusters in Serbo-Croat
3) Nominative Case Assignment
4) Evidence from other languages:
   Portuguese and Bulgarian
5) Related Issue – PRO and Infinitive Clause
6) Summary

1) Introduction

This Chapter concentrates on Serbo-Croat Agreement, its properties, its roles and structure. Compared to the English, the Slavic Agreement system is not only richer, but also more powerful in that it is present at both Spell-Out and LF.

I hope to show that Serbo-Croat Agreement features are never found alone but that they cluster together in three ways. They seem to always act in pairs or, in case of some pronouns, in groups of three features. I observe this by analysing the structure of Agreement inflection on nouns, adjectives, pronouns and verbs. The Serbo-Croat way of Nominative Case assignment/checking is also dealt with in this Chapter and evidence is provided that at least Portuguese and Bulgarian also use the same Nominative Case assigner.

A related issue of infinitive clauses is then addressed, showing that Serbo-Croat is able to inflect its Infinitives for Person and Number and giving the reasons why it does so.

A new rule of distribution of PRO is given at the end.

2) Types of Agreement Clusters in Serbo-Croat

Agreement is a syntactic category that covers the nominal features Person, Number and Gender. In Serbo-Croat, these features are found on nouns, adjectives, pronouns and verbs (both AUX and main).

Recall that Chomsky (1995)[67] views intrinsic features as those that are either contained in the lexical item LI itself, or determined by other inherent features of that lexical item. Optional features, on the other hand, are those that have to be specified when the lexical item enters numeration. The Minimalist Program (Chomsky, 1995)[68] does not take the distinction between intrinsic and optional features as a relevant factor in the process of interpretation, but emphasises the importance of the opposition between interpretable and non-interpretable features. Interpretable features are all categorial features and phi-features of nominals, while non-interpretable ones are all the rest (for example, the Case features of V and T).

In order to understand how Agreement features are realised on Serbo-Croat verbs and to clarify their role in the Serbo-Croat temporal interpretation, we shall first look at Serbo-Croat Agreement generally, as it appears on nouns, adjectives and pronouns, before we move on to verbs.

Since phi-features are not inherent to verbs, they can only be added to them as optional features, once verbs enter the numeration. In other words, Agreement features on verbs can only be morphological features realised as affixes. Thus, when we look into Agreement on nouns, adjectives and pronouns, we shall only be interested in non-intrinsic, optional features, those that are only realised morphologically, as (possibly null) affixes. The aim is to establish whether the Agreement affixes are all the same, or whether there are different types of these morphological clusters.

What I intend to show in this part is that phi-features are not equally distributed across the lexical and functional categories that get marked for Agreement. There seem to be three types of Agreement feature clusters, Number appearing obligatorily in all of them. Earlier, in Chapter II, we have seen that, in the absence of Tense markers, Serbo-Croat resorts to Aspect and Primary and Secondary Person and Number suffixes for temporal marking. Serbo-Croat not only groups its Agreement features in two different ways, but also this distinction is used as an additional aid in signalling various Tense forms. Let us first observe how these features are realised on each category they inflect, namely: nouns, adjectives, pronouns and verbs.

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[67] Chomsky (1995), page 231: "... Some of the features of FF(LI) are *intrinsic* to it. either listed explicitly in the lexical entry or strictly determined by the properties so listed... Others are *optional*. added as LI enters numeration..."

[68] Chomsky (1995), page 277: "... The intrinsic-optional distinction plays virtually no role here. but there is a much more important distinction that has so far been overlooked. Evidently. certain features of FF(LI) enter into interpretation at LF while others are uninterpretable and must be eliminated for convergence. We therefore have a crucial distinction +/- interpretable. Among the Interpretable features are categorial features and the phi-features of nominals..."

2.1. Nouns

Serbo-Croat nouns consist of stems and Case and Agreement inflection. As far as the Agreement markers are concerned, all nouns contain information about Person, Number and Gender. Some of these features are intrinsic, some are optional.

Nouns are generally understood to be specified for a [3rd person] feature[69]. The only way to change the [3rd person] feature of a noun is to use the 1st or the 2nd person pronouns. For example:

(78a) **You children**, come here!   **Vi djeco**, dođite ovamo!
(78b) **We students** work very hard.   **Mi studenti** smo veoma vrijedni.

Isolated, nouns are intrinsically marked for a [3rd person] feature. This means that the [3rd person] feature is contained in every noun before it enters the numeration and it is not morphologically realised. Since we are investigating the morphological realisation of Agreement features, the Person feature of nouns is of no interest to us.

As for the Gender feature, things are more complicated. Serbo-Croat nouns have grammatical Gender. Let us look at few examples:

Table 4. 1. Gender of Serbo Croat nouns

Masculine	Female	Neuter
sto 'table'	*stolica* 'chair'	*sunce* 'sun'
prozor 'window'	*kuća* 'house'	*srce* 'heart'
davo 'devil'	*ljepota* 'beauty'	*otkriće* 'discovery'
oblak 'cloud'	*ljubav* 'love'	*vrijeme* 'time'
posao 'work'	*mati* 'mother'	*oko* 'eye'
put 'journey'	*sreća* 'happiness'	*ubistvo* 'murder'
nož 'knife'	*kašika* 'spoon'	*mlijeko* 'milk'
tanjir 'plate'	*čaša* 'glass'	*vino* 'wine'
vrt 'garden'	*kost* 'bone'	*lice* 'face'
most 'bridge'	*knjiga* 'book'	*more* 'sea'
prst 'finger'	*uspomena* 'memory'	*nebo* 'sky'

Most masculine nouns end in a consonant = *zero* marker (a few in *–o*).
Most feminine nouns end in *–a* (a few in *–i* or have zero ending).
Most neuter nouns end in *–o* and *-e*.

Depending on their endings, they are grouped into different declensions, which decide their Case affixes.

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[69] Chomsky (1995). page 231: "... In the case of *aeroplane*. the intrinsic properties include the categorial feature [nominal]. the person feature [3 person]. and the gender feature [-human]. Its optional properties include the noncategorial features of number and Case...."

Table 4.2. Three main declension types

-o, -e, -zero in the Nominative singular
   This includes most masculine, all neuter and some feminine forms.
-a in the Nominative singular
   This includes most feminine and some masculine nouns
-i in the Nominative singular
   This includes all feminines apart from *-a* and *-zero* stems.

One might assume that all nouns in this language are inherently marked for Gender, and that morphology plays no role in Gender marking. One could indeed argue that, if there were Gender morphemes that attach to a noun and mark it as masculine, feminine or neuter, then it would be possible to switch these markers around and change the gender marking of all nouns. For example, it would be possible to take a masculine noun, say *prozor* 'window' and make it feminine or neuter by changing its gender affix.

I would like to argue for the opposite view. It is indeed true that the Gender of the above nouns cannot be changed, but there is also enough evidence to suggest that gender markers do exist and that every noun does have a slot for a Gender suffix.

First
All nouns of the same Gender can be neatly grouped according to their endings. This grouping suggests that all masculine nouns have either a *zero* marker as they end in a consonant, or they end in *-o*. Female nouns end in *-a*, which can be seen as a feminine Gender marker. Neuter nouns tend to end in *-o* or *-e*, which one can take to be neuter gender markers. Of course, each one of the three groups have a small number of exceptions: masculine nouns that end in *-e*, feminine nouns that end in *-i* or a consonant (*zero* marker).

Second
The best arguments for the existence of Gender suffixes on nouns can be found amongst names of some animals or professions, where the Gender distinction is natural and needs to be realised grammatically as well. (A similar situation also exists English: *tiger – tigress*).

Table 4.3. Names of animals

Masculine	Feminine	Neuter
lav 'lion', m.	lavica 'lioness', f.	lavče 'baby lion', n.
tigar 'tiger', m.	tigrica 'tigress', f.	
učenik 'pupil', m.	učenica 'pupil', f.	
ljekar 'doctor', m.	ljekarka 'doctor', f.	
doktor 'doctor', m.	doktorica 'doctor', f.	
mačak 'cat', m.	mačka 'cat', f.	mače 'baby cat', n.
	ptica 'bird', f.	ptiče 'baby bird', n.
patak 'duck', m.	patka 'duck', f.	pače 'baby duck', n.
ovan 'ram', m.	ovca 'sheep', f.	

The above examples show that nouns are morphologically marked for Gender. In addition to the endings which we have established for non-human nouns, there are also those used for changing the Gender specification of so-called human nouns: the masculine Gender marker, is still -∅, feminine Gender markers are –ica and –ka, while the neuter Gender marker is –če. Traces of this rule can also be found on some non-human nouns that are generated following the above pattern: sto, m. 'table' and stolica, f 'chair'

Third
And finally, the endings on adjectives and verbs that agree with subject nouns in Gender change with the change of Gender of the subject noun.

Table 4.4. Agreement endings on adjectives and verbs

Adjectives	Verbs
Žedan∅	pio
Žedna	pila
Žedno	pilo

(79a) Žedan   čovjek   je pio   vodu.
     Thirsty –m.   *man-m.*   *drink-m.*   *water*
     (A thirsty man was drinking water.)

(79b) Žedna   žena   je pila   vodu.
     Thirsty –f.   *woman-f.*   *drink-f.*   *water*
     (A thirsty woman was drinking water.)

(79c) Žedno   dijete   je pilo   vodu.
     Thirsty –n.   *child-n.*   *drink-n.*   *water*
     (A thirsty child was drinking water.)

Number is an optional feature of nouns and it has to be specified during numeration. The singular form is the unmarked form.

Nouns ending in a consonant (null Gender marker) get the plural suffixes: –i, -ovi, -evi. A plural marker generally merges with the Gender marker resulting in the following endings:

Table 4.5 Gender markers

Masculine –o + plural –i = -ovi, -evi   (-v- prevents merging of the two vowels)
Masculine –zero + plural –i = -i, -ovi, -evi   (analogy with the above)
Feminine –a + plural -i = -e
Neuter –e + plural -i = -a
       -o + plural -i = -a

Table 4.6. Number markers on masculine nouns

Masculine singular	Masculine plural
prozor 'window'	*prozori* 'windows'
tanjir 'plate'	*tanjiri* 'plates'
papir 'paper'	*papiri* 'papers'
sto 'table'	*stolovi* 'tables'
oblak 'cloud'	*oblaci* 'clouds'
put 'journey'	*putevi* 'journeys'
miš 'mouse'	*miševi* 'mice'
most 'bridge'	*mostovi* 'bridges'
posao 'job'	*poslovi* 'jobs'

Table 4.7. Number markers on feminine nouns

Feminine singular	Feminine plural
stolica 'chair'	*stolice* 'chairs'
kuća 'house'	*kuće* 'houses'
ljepota 'beauty'	*ljepote* 'beauties'
kašika 'spoon'	*kašike* 'spoons'
čaša 'glass'	*čaše* 'glasses'
slika 'picture'	*slike* 'pictures'
kost 'bone'	*kosti* 'bones'

Table 4.8. Number markers on neuter nouns

Neuter singular	Neuter plural
sunce 'sun'	*sunca* 'suns'
srce 'heart'	*srca* 'hearts'
otkriće 'discovery'	*otkrića* 'discoveries'
vrijeme 'time'	*vremena* 'times'
oko 'eye'	*oči* 'eyes'
ubistvo 'murder'	*ubistva* 'murders'
vino 'wine'	*vina* 'wines'
lice 'face'	*lica* 'faces'
more 'sea'	*mora* 'seas'
nebo 'sky'	*neba* 'skies'

Thus, phonological changes and processes that affect adjacent vowels here result in merging of Gender and Number and Case suffixes into a cluster.

The same clusters appear on adjectives and verbs as well. Let us go back to the examples already used and observe how the Gender and Number suffixes match all the three lexical items on which they appear: adjective, subject noun and predicate:

Masculine singular:
(80a) Žedan   čovjek   je pio   vodu.
     Thirsty –m.,sing.   *man-m., sing.*   *drink-m., sing.*   *water*
     (A thirsty man was drinking water.)

Masculine plural:
(80b) Žedni   ljudi   su pili   vodu.
     Thirsty –m. plur.   *man- m. plur.*   *drink- m. plur.*   *water*
     (Thirsty men were drinking water.)

Feminine singular:
(81a) Žedna   žena   je pila   vodu.
     Thirsty –f., sing.   *woman—f., sing.*   *drink—f., sing.*   *water*
     (A thirsty woman was drinking water.)

Feminine plural:
(81b) Žedne   žene   su pile   vodu.
     Thirsty –f., plur.   *woman—f., plur.*   *drink—f., plur.*   *water*
     (Thirsty women were drinking water.)

Neuter singular:
(82a) Žedno   dijete   je pilo   vodu.
     Thirsty –n., sing   *child- n., sing.*   *drink- n., sing.*   *water*
     (A thirsty child was drinking water.)

Neuter plural:
(82b) Žedna   dijeca   su pila   vodu.
     Thirsty –n., plur.   *child- n., plur.*   *drink- n., plur.*   *water*
     (Thirsty children were drinking water.)

On the basis of the above, nouns are marked for the phi-features Person, Gender and Number. However, the [3rd person] is an intrinsic feature to all nouns[70] and, as such, it is not morphologically realised. Gender and Number, on the other hand, are optional phi-features that merge into a phonological and morphological cluster, which attaches to nouns as a Gender and Number suffix (which further combines with Case markers, which we leave aside). Thus, we have discovered the first of the three types of *morphological* Agreement clusters, affixes: the **Gender+Number** cluster.

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[70] Here we ignore the cases where the [1st person] or the [2nd person] pronouns are used with nouns as their Determiners with the sole reason that the Person specification of the personal pronoun overrules the [3rd person] feature of the noun. For example:

Students   students = [3rd person]
You students   students = [2nd person]
We students   students = [1st person]

2.2. Adjectives

With respect to phi-features, the situation with Serbo-Croat adjectives is identical to that of nouns. We have already seen this in the sentential examples above. Adjectives are intrinsically specified for [3rd person][71] and morphologically marked for Gender and Number once they enter numeration. The same **Gender+Number** cluster appears on adjectives as well as on nouns.

2.3. Pronouns

When compared to nouns, pronouns do not have inherent reference. They refer to entities through their Agreement features. In fact, they do not convey anything else but Agreement features, and they do not consist of anything else but Agreement features. This is the reason why, whenever the Agreement of a pronoun can be recovered from other elements of the same sentence, say AUX, the pronouns become redundant and are omitted from the clause (in pro-drop languages).

Table 4.9. The Present Finite form of the AUX verb *biti* 'to be'

	singular		plural
1st	sam	1st	smo
2nd	si	2nd	ste
3rd	je	3rd	su

1st singular	(Pro) Sam.	Pro = *ja* 'I'
2nd singular	(Pro) Si.	Pro = *ti* 'you'
3rd singular	(Pro) Je.	Pro = *on/ona/ono* 'he/she/it'
1st plural	(Pro) Smo.	Pro = *mi* 'we'
2nd plural	(Pro) Ste.	Pro = *vi* 'you', pl.
3rd plural	(Pro) Su.	Pro = *oni/one/ona* 'they', masc./fem./neut.

Loosely speaking, the same Agreement feature clusters that act as suffixes on some, may also stand as independent words – pronouns (however, different morphemes may be used for the same Agreement features).

Here, we look at the pronouns purely as morphological clusters of Agreement features. We need to determine whether these clusters are of the same composition as the suffixes on nouns and adjectives (Gender+Number cluster).

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[71] [1st person] or the [2nd person] pronouns can also affect the [3rd person] feature of adjectives in the same way as they affect nouns:

Stupid boy	stupid = [3rd person]
You stupid boy	stupid = [2nd person]
We stupid boys	stupid = [3rd person]

<u>Table 4.10. Personal pronouns:</u>

Ja 'I',	[1st person], [singular],
Ti 'You',	[2nd person], [singular],
On 'He',	[3rd person], [masculine], [singular],
Ona 'She',	[3rd person], [feminine], [singular],
Ono 'It',	[3rd person], [neuter], [singular],
Mi 'We',	[1st person], [plural],
Vi 'You',	[2nd person], [plural],
Oni 'They', m.	[3rd person], [masculine], [plural],
One 'They', f.	[3rd person], [feminine], [plural],
Ona 'They', n.	[3rd person], [neuter], [plural].

Pronouns do not communicate any information other than the information specified above. We can see that [1st] and [2nd person] pronouns differ from the [3rd person] pronouns in that they are not marked for Gender[72]. Therefore, 1st and 2nd person pronouns are nothing else but bundles of **Person+Number** morphemes, which is the second type of Agreement feature cluster:

Ja 'I',	[1st person], [singular],
Ti 'You',	[2nd person], [singular],
Mi 'We',	[1st person], [plural],
Vi 'You',	[2nd person], [plural].

As they lack natural reference, the 3rd person pronouns call for additional Gender markers, the same as those used for nouns. Thus, 3rd person pronouns consist of the third type of Agreement feature clusters, **Person + Gender + Number**[73]:

On 'He',	[3rd person], [masculine], [singular],
Ona 'She',	[3rd person], [feminine], [singular],
Ono 'It',	[3rd person], [neuter], [singular],
Oni 'They', m.	[3rd person], [masculine], [plural],
One 'They', f.	[3rd person], [feminine], [plural],
Ona 'They', n.	[3rd person], [neuter], [plural],

Person [3rd] + Gender [fem] + Number [plur]
    On-   +   **-a**   → Ona +   **-i**   → One

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[72] [1st person] and [2nd person] pronouns do not convey any Gender information. This is understandable, for the following reason: they always refer to the participants in the conversation, who are undoubtedly aware of each other's Gender. To specify, in the conversation, whether the speaker or the hearer is being referred to, all that one needs are

     Person (speaker or hearer) and

     Number (in case there is more than one speaker and hearer)

[73] They differ from nouns in that the Person feature of personal pronouns is morphologically realised, while the Person feature of nouns is not. As we are only interested in *morphological* clusters, we see nouns as having a *Gender+Number* cluster suffixed to them, while the [3rd person] pronouns are the *Person+Gender+Number* suffix itself.

2.4. Verbs

The sequences of morphological Agreement markers in Serbo-Croat have been the subject of many phonological processes and changes and are now incorporated to the point that it is impossible to dissect these bundles and separate the morphemes.

Table 4.11. Three types of Agreement *morpheme* clusters:

1. Person+Number   (1st and 2nd person pronouns)
2. Gender+Number   (nouns and adjectives)[74]
3. Person+Gender+Number   (3rd person pronouns)

A Person feature is inherent to nouns so there is no need to attach a Person suffix to them. Gender is omitted from 1st and 2nd person pronouns, as their reference can easily be ascertained. But in all cases, Number is necessary to ensure a correct interpretation.

Table 4.12. Serbo-Croat finite forms:

Simple forms:	Present		MV: Imperfective+(P1+N)	
	Imperfect		MV: Imperfective+(P2+N)	
	Future II		MV: Perfective+(P1+N)	
	Aorist		MV: Perfective+(P2+N)	
Compound forms:	Past/Perfect	AUX: Imperfective+(P1+N)	MV: (G+N)	
	Pluperfect	AUX: Imperfective+(P2+N)	MV: (G+N)	
	Present Conditional (Future II)	AUX: Perfective+(P1+N)	MV: (G+N)	
	Past Conditional	AUX: Perfective+(P2+N)+ (G+N)	MV: (G+N)	

(P1, P2 = Primary and Secondary set of Person markers; N, G = Number[75] and Gender; AUX = auxiliary verb; MV = main verb)

Proto-Indo-European, a tenseless language, distinguished between past and non-past only, and the only difference between past and non-past was Aspect[76]. Introducing the Primary and Secondary Person[77] and Number markers into temporal marking doubled the number of possible finite forms, from two to four.

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[74] Although both nouns and adjectives are also *inherently* marked for Person (3rd), only Gender and Number features are *morphologically* realized.

[75] Number plays no role in temporal marking, as it appears in every form.

[76] The only reason why, in the absence of an independent Tense marker. Proto-Indo European perfective verbs were understood as Past is that they described a *completed* action (completed, therefore past). Imperfective verbs. on the other hand. signalled non-completion of an action (not completed, therefore still ongoing, therefore non-Past) and were understood as non-past (present and future).

[77] Serbo-Croatian has not one, but two independent sets of Person markers. Both sets are equal in their ability to signal Person features. The only difference between them is that they are composed of different morphemes. For example. English has one morphologically realized Person marker +s added to the verbs in the 3rd person in the Present Tense (*He dance+s.*). This suffix signals nothing but [3rd person] feature. Now. imagine that English had an alternative suffix that would also signal nothing but [3rd person] feature, say a suffix +k. So, sometimes one would use +s. and sometimes +k (*He dance+s. He dance-k.*).

Table 4.13. P1+N cluster (P1 = Primary set of Person markers):

	singular		plural
1.	+m, +u	1.	+mo
2.	+š	2.	+te
3.	+će, +∅	3.	+u, +ju, +e

Table 4.14. P2+N cluster (P2 = Secondary set of Person markers):

	singular		plural
1.	+h	1.	+smo
2.	+še, +∅	2.	+ste
3.	+še, +∅	3.	+še, +hu

Depending on the phonological properties of the adjacent verb stem, the above markers may be manifested differently on different verb stems. In addition to this, they may manifest differently, even if used with the same verb, depending on whether they are preceded by an imperfective marker or not (for example, among the P1+N markers, 1st sing: +m/+u, 3rd sing: +će/+∅, 3rd pl: +u/+ju/+e, and among the P2+N markers, 2nd and 3rd sing: +še/+∅, 3rd pl: +še/+hu).

Thus, for example, P2+N endings are added to both the Imperfect and the Aorist, but in the Imperfect, they are preceded by the imperfect marker –ija- with which they enter into a series of phonological processes, which result in the final form of the P2+N ending in 2nd and 3rd singular and the 3rd plural as +še. The same endings are used for the formation of the Aorist Finite, which is formed out of perfective verbs only. The imperfective marker –ija does not interfere here, and the P2+N enter a different set of phonological processes with the verb stem, which results in the 2nd and 3rd singular ending +∅, and the 3rd plural ending +hu.

Developing the system of finite forms called for further signals and the second Agreement morpheme cluster was brought in. The Gender and Number cluster (G + N) on verbs further increased the number of possible finite forms from four to eight. This is the same Agreement feature bundle which we have already seen on nouns and adjectives.

None of these factors (P1+N, P2+N, G+N, imperf., perf.) can be exclusively associated with past or non-past, as they all appear in both past and non-past finite forms. Our list of factors involved in Serbo-Croat temporal interpretation is now complete. In the absence of independent Tense markers, Serbo-Croat temporal marking depends on:

1. Aspect value
2. Presence and type of Agreement morpheme clusters

3) Nominative Case Assignment

3.1. Nominative Case Assigner

Every phonetically realised NP has to be assigned (abstract) Case. The Case feature is not Interpretable and, as such, it has to be eliminated by LF. In English, the Nominative Case is assigned by the Tense Head. As a Tense Head does not exist in Serbo-Croat, it has to be established how the Nominative Case is assigned in this language. Let us start by comparing Serbo-Croat with English. In English, the subject appears in the Nominative in finite clauses only.

(83) Maria/she   sleeps.
     Maria/she+Nom   *sleep+Present*

The Tense Head of non-finite (tenseless) clauses is too weak to assign Case. Thus, the subject is assigned Case by an external Case assigner, which happens to be an Accusative Case assigner. This explains why the subject now appears in Accusative.

(84) I wanted [Maria/her   to sleep].
     Maria/she+Acc sleep+inf

In the Government and Binding Theory and The Minimalist Program, this phenomenon is known as ECM, Exceptional Case Marking. The absence of Tense forces Serbo-Croat to resort to different measures. The following examples are preceded by English equivalents, for easier comparison.

English	Serbo-Croat
(85a) Maria/she sleeps.	(85b) Marija/ona spava.
Maria+Nom sleep+Present	*Maria+Nom sleep+3rd+sing.*

In both languages, in the ordinary finite clause, the subject is in the Nominative Case. In the English example, this Case has been assigned and checked by the finite Tense Head, but it is not obvious what is responsible for Nominative Case assignment in the Serbo-Croat example. If this clause is converted into an Infinitive clause (a tenseless clause), the English subject does not receive its Nominative Case, and this is understandable. What one does *not* expect, however, is the subject of Serbo-Croat tenseless clause to lose its Nominative. As a Tense Head does not exist, whatever element assigned the Case in the previous clause (Present Finite) should be able to do the same in a non-finite clause.

English	Serbo-Croat
(86a) *Sasha wanted [Maria/she to sleep].	(86b) *Saša je htio [Marija spavati].
[Maria−Nom sleep−inf]	*Sasha wanted [Maria−Nom sleep+inf]*
(Sasha wanted Maria to sleep.)	(Sasha wanted Maria to sleep.)

English solves the problem through Exceptional Case Marking, and the subject is assigned Accusative by the MV of the main clause. The same strategy, however, does not work for Serbo-Croat:

English	Serbo-Croat
(87a) Sasha wanted [Maria/her to sleep].	(87b) *Saša je htio [Mariju spavati].
[Maria+Acc sleep+inf]	*Sasha wanted [Maria+Acc sleep+inf]*
(Sasha wanted Maria to sleep.)	(Sasha wanted Maria to sleep.)

One way to save the Serbo-Croat example is to have a *non-overt* subject NP in the subordinate clause. This is also allowed in English for some verbs:

English	Serbo-Croat
(88a) Sasha wanted [PRO sleep+inf]	(88b) Saša je htio [PRO spavati].
[PRO sleep+inf]	*Sasha wanted [PRO sleep+inf]*
(Sasha wanted to sleep.)	(Sasha wanted to sleep.)

If the meaning of this clause is compared with the meaning of the original one, this is not a satisfactory result. The subject of the Infinitival clause is not understood to be 'Maria' any more. The reference for PRO in the lower clause is obligatorily linked to the subject of the main clause (*Sasha*) and the interpretation of the clause is changed. This phenomenon is usually referred to as Subject control of PRO. As Subject control necessarily links the reference of PRO to the reference of the subject of the matrix clause, the meaning of the sentence changes. Semantic considerations, in this example, demand an overt subject in the Infinitive clause, in order that the reference of PRO remains 'Mary'.

English resorts to ECM (Exceptional Case Marking), but Serbo-Croat behaves rather differently. In Serbo-Croat, the external Case marker (the MV of the main clause) is not allowed to assign the Accusative Case to the subject of the lower clause, as in English.

English	Serbo-Croat
(89a) Sasha wanted [Maria/her to sleep]	(89b)*Saša je htio [Mariju spavati].
Sasha wanted [Maria+Acc sleep+inf]	**Sasha wanted [Maria+Acc sleep+inf]*
(Sasha wanted Maria to sleep.)	(Sasha wanted Maria to sleep.)

One can opt for a non-overt subject (pro), but the reference of the subordinate clause subject changes from 'Maria' to 'Sasha':

Sasha wanted Maria to sleep.

does not mean the same as: Sasha wanted to sleep.

To keep the original meaning, Serbo-Croat inflects the Infinitive for Person and Number.

The Infinitive marker *-ti* in the two ungrammatical sentences above is replaced by the Person and Number markers in the corresponding two grammatical ones and the problem of the subject Case in the Infinitive clauses above is solved.

(90) Saša je htio [da [Marija spava].
   Sasha wanted [that [Maria+Nom sleep+3rd+sing]
   (Sasha wanted Maria to sleep.)

The subject of the lower clause is assigned the Nominative Case. The lower clause itself is now an Inflected Infinitive clause, and therefore, still a non-finite clause. Although one may want to question the role of the complementizer *da* in the above example, please ignore it for the time being, as more will be said about it in the section on complementizers. Thus, Nominative Case assignment/checking in Serbo-Croat Infinitive clauses is done either by Person and Number Heads or by the lexical Head, which checks the phi-features of the MV[78] in the complement clause.

We now address the following questions.

Why is it that Serbo-Croat does not allow Exceptional Case Marking, but inflects its Infinitives instead, for the same purpose?
Which particular Agreement feature is responsible for Nominative Case assignment: Person or Number or both?
Is it the Primary or the Secondary set of Person markers that is used here?
As Inflected Infinitives have the same inflection that is also used for the Present Finite formation, how do we know that these Inflected Infinitives are not, in fact, the Present Finite forms, therefore +finite clauses?

3.2. Why is ECM not allowed in Serbo-Croat

Let us start by looking into an English example in order to find out why it is that English DOES need ECM.

(91) John wants [Maria-Acc to go home]

In English, it is Tense that assigns the Nominative Case. To have the Nominative Case assigner, the Tense Head, in a non-finite clause would be a contradiction. It would mean having Tense in what should be a tenseless clause. It would mean just changing the non-finite clause into a finite one and simply avoiding the problem instead of solving it, as there is no other way around it. To preserve the non-finite clause and still assign the Nominative Case to the overt subject NP, the only solution is doing it from outside, by the main verb of the matrix clause, which happens to be an Accusative Case assigner.

Thus, we shall take ECM to be the last resort and the only available solution for English.

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[78] Phi features are present on the Serbo-Croat finite verbs. They are marked for Person. Number and. in the complex finite forms. for Gender as well. With the exception of the 3rd person singular of the present tense form (-*s*), English verbs are not marked for phi-features.

In SC, there is no Tense Head. Thus, in all finite clauses, the Nominative Case is assigned by a different assigner, not Tense. As the SC Nominative Case assigner is *not* Tense, whatever it is, it can appear in tenseless clauses without changing them into a finite one[79].

(92) Saša je htio   [da [Marija   spava].
     Sasha wanted [that [Maria+Nom sleep+3rd+sing]
     (Sasha wanted Maria to sleep.)

In theory, then, the roles of the Nominative Case assigner and temporal marking may be separate in Serbo-Croat and not necessarily properties of the same Head as they are in English. Following this kind of reasoning, whatever it is that assigns the Nominative Case in finite clauses may well have nothing to do with temporal marking. If that is the case, then there is no reason why this same Nominative Case assigner should not assign the Nominative Case in non-finite clauses, since it does not interfere with the [finiteness] feature (temporal marking).

The two factors essential in Serbo-Croat temporal interpretation are Aspect value and the presence and type of Agreement morpheme clusters. Aspect and Agreement act together. Aspect alone or Agreement alone is not enough to signal temporal properties of a predicate, otherwise temporal marking would be possible through the Agreement inflection of nouns. Not only does temporal interpretation require both Aspect and Agreement features, but also it requires a *specific choice* of these features. Thus, in Serbo-Croat, it is possible to separate Nominative Case assignment and temporal marking. This leads to the following conclusion:

Thus, we conclude that Nominative Case marking in Serbo-Croat is performed by a Person and Number feature cluster. This is true for both finite and non-finite clauses. As Person and Number markers cannot alone determine the temporal properties of a predicate, they cause no problem in non-finite clauses and there is no need for Serbo-Croat to invent an alternative Case marking for Infinitive clauses. ECM is a last resort measure in English, but not in Serbo-Croat, which assigns the Nominative in one way and one way only, which works for both finite and non-finite clauses.

3.3. Nominative Case assigner

Let us look again at the earlier example of Serbo-Croat Inflected Infinitive clauses:

(93) Saša je htio   [da   [Marija   spava].
     Sasha wanted [that [Maria+Nom sleep+3rd+sing]
     (Sasha wanted Maria to sleep.)

---

[79] If the English Nominative Case assigner (the Tense Head) appears in a non-finite (tenseless) clause, it changes the clause from a non-finite into a finite clause. As the Tense Head does not exist in Serbo-Croat, the Nominative Case must be assigned by a factor *other* than Tense. As the Serbo-Croat Nominative Case assigner has nothing to do with Tense, it can appear in a non-finite clause. As it is possible to have the regular Nominative Case assigner in a non-finite clause, there is no need for Serbo-Croat to resort to Exceptional Case Marking.

For the subject of the above non-finite clause to receive the Nominative Case, both Person and Number markers are needed. Recall the three types of morphological clusters of Agreement features (Table 4.11., page 89):

a) Person+Number
b) Gender+Number and
c) Person+Gender+Number

Gender, we can be sure, is not involved in Case marking. As for the Person+Number cluster, it is obligatory in any finite form, for two reasons:
a) to contribute to temporal marking, where this cluster plays a role,
b) to ensure that the Nominative Case is assigned to the subject NP.

This is why the Person+Number morpheme cluster is involved in every Serbo-Croat finite form (Table 4.12., page 89). In compound finite forms, it appears on AUX, while the Gender+Number cluster attaches to the main verb. In simple finite forms, in the absence of AUX, the Gender+Number cluster is not allowed to attach to the main verb, as the Person+Number suffix has priority, due to its Case assigning quality. It is the Primary set that is used for the Inflected Infinitivals.

3.4. Could this Inflected Infinitive be a finite clause?

Let us look at our earlier example of Inflected Infinitives once more:

(94) Saša je htio   [da   [Marija   spava].
     Sasha wanted [that [Maria+Nom sleep+3rd+sing]
     (Sasha wanted Maria to sleep.)

Let us isolate the above Infinitive clause,
(95) [Marija   spava].
.... ..*[Maria+Nom sleep-3rd+sing]*
     (Maria to sleep.)

and compare it with the same clause in the Present Finite Form:
(96) Marija   spava.
     Maria+Nom sleep+3rd+sing
     (Maria is sleeping.)

There is no obvious difference. To determine whether the first example is an Inflected Infinitive, or both clauses are finite clauses, let us imagine that we are about to transform a finite clause into a non-finite clause, but make sure that Nominative Case assignment is not affected.

Let us take the following sentence:

(97) Sa\u0161a misli **[da** **[Marija** **spava.]]**
    Sasha thinks [that [Marija+Nom sleep+fem+sing.]]
                            MV+G+N   (Sasha thinks that Maria is sleeping)

If the verb from the matrix clause is replaced with one that takes an Infinitival complement:

(98) Sa\u0161a ho\u0107e **[da [Marija spava.]]**
    Sasha wants [that [Marija+Nom sleep+fem+sing.]]
                  MV+G+N   (Sasha wants Maria to sleep.)

The subordinate clauses in the previous two examples are still identical and there is nothing to suggest that the second one is a non-finite, Infinitival clause. If they both *are* finite clauses, then we should be able to replace both subordinate clauses with alternative ones in any finite form. But, surprisingly, this is possible only in the first example:

(99a) Sa\u0161a misli **[da** **[Marija** **spava.]]**   (Sasa thinks that M. is sleeping)
(99b) Sa\u0161a misli **[da** **[Marija** **spavase.]]**   (Sasa thinks that M. was sleeping)
(99c) Sa\u0161a misli **[da** **[Marija** **odspavase.]]**   (Sasa thinks that M. slept)
(99d) Sa\u0161a misli **[da je [Marija** **spavala.]]**   (Sasa thinks that M. was sleeping)
(99e) Sa\u0161a misli **[da** **[Marija bija\u0161e spavala.]]**   (Sasa thinks that M. was sleeping)
(99f) S. misli **[da je [Marija bila** **spavala.]]**   (Sasa thinks that M. had been sleeping)
(99g) Sa\u0161a misli **[da \u0107e [Marija** **spavati.]]**   (Sasa thinks that M. will sleep.)

The only form that cannot appear here is the Future II, but for unrelated reasons: the use of the Future II form is restricted to Conditional clauses only, where it denotes a future action that precedes another future action. If we attempt to do the same with the second example, the result is the following:

(100a) Sa\u0161a ho\u0107e **[da [Marija spava.]]**   (Sasa wants M. to sleep.)
(100b) *Sa\u0161a ho\u0107e **[da [Marija spavase.]]**   (*Sasa wants that M. was sleeping)
(100c) *Sa\u0161a ho\u0107e **[da [Marija odspavase.]]**   (*Sasa wants that M. slept)
(100d) *Sa\u0161a ho\u0107e **[da je [Marija spavala.]]**   (*Sasa wants that M. was sleeping)
(100e) *Sa\u0161a ho\u0107e **[da [Marija bija\u0161e spavala.]]**   (*Sasa wants that M. was sleeping)
(100f) *S. ho\u0107e **[da je [Marija bila spavala.]]** (*Sasa wants that M. had been sleeping)
(100g) *Sa\u0161a ho\u0107e **[da \u0107e [Marija spavati.]]**   (*Sasa wants that M. will sleep.)
(100h) Sa\u0161a ho\u0107e **[da [Marija odspava.]]**   (Sasa wants M. to sleep.)

Notice also that, in the last example, the Future II, the only finite form disallowed in the previous case, is now permitted. This can only be explained by the fact that the main clause verb *misliti* 'to think' takes a finite clause as its complement, while the main clause verb *htjeti* 'to want' takes an Infinitival clause as its complement. Now, why is it that only the Present Finite form and the Future II Finite form qualify for the Infinitival clause predicate? We have already established that the subject of Serbo-Croat Infinitival clauses appears in the Nominative Case only and that all that is needed for Nominative Case assignment is the Person and Number cluster and nothing else.

The composition of the Present Finite form is the simplest one: verb+P1+N. Apart from the stem, it contains nothing *but* the Primary Person and Number cluster. Whether this form is interpreted as the Present Finite or as an Inflected Infinitive, depends on the semantics of the main clause verb (e.g. *misliti* 'to think' takes a finite clause as its complement, while *htjeti* 'to want' takes an Infinitival clause as its complement).

We have also seen that Aspect plays an important role in Serbo-Croat temporal interpretation. This is the reason why the use of Aspect in finite clauses is restricted and strictly controlled. But, as Infinitive clauses are non-finite (tenseless) clauses, they impose no restrictions on Aspect: both perfective and imperfective verbs are free to appear in any non-finite clause.

What we have in Inflected Infinitive clauses are verbs of either Aspect value and the Nominative case assigner, the Primary Set of the Person and Number markers, P1+N: imperfective verbs + P1+N, and perfective verbs + P1+N.

Due to the similarities between the structure of the Inflected Infinitives and the structure of the Present and the Future II Finite forms, it *looks like* only the Present Finite form and the Future II form are found in Infinitival clauses:
Present Tense form consists of: imperfective verbs + P1+N
Future II form consists of: perfective verbs + P1+N.

All other finite forms contain factors that are irrelevant for Nominative Case marking and the semantics of the predicate (i.e.: AUX, G+N cluster, P2+N).

It is important to note that, in Inflected Infinitive clauses,
imperfective verbs + P1+N, and
perfective verbs + P1+N
are *not* interpreted as finite forms (the Present and the Future II), but simply as verbs of either Aspectual value with the necessary Nominative Case assigner.

If the Person+Number cluster is capable of checking the Nominative Case in Infinitival clauses, there is no reason why it should not do so in finite clauses as well. Every Serbo-Croat finite clause must have Person and Number markers either on the AUX or on the MV, depending on whether the finite form is compound or simple, respectively. In compound finite forms, AUX is always inflected for Person and Number, while the inflection on the MV is Gender+Number. However, in simple finite forms, where there is no AUX, the MV is always inflected for Person and Number and the Gender+Number cluster has no free verb stem to attach to.

4) Evidence from other languages:
Portuguese and Bulgarian

4.1. Portuguese[80]

The Serbo-Croat way of Nominative Case assignment is not unique. Portuguese and Galician also have Inflected Infinitives, which differ from the non-inflected Infinitives as:
- they are morphologically marked for Agreement and
- they allow lexical subjects, which are assigned Nominative Case.

Table 4.15. Portuguese Agreement endings
(para) eu falar∅	'(for) I to-speak-1sg'
(para) tu falares	'(for) you to-speak-2sg'
(para) ela falar∅	'(for) she to-speak-3sg'
(para) nós falarmos	'(for) we to-speak-1pl'
(para) vocís falarem	'(for) you to-speak-2pl'
(para) elas falarem	'(for) they to-speak-3pl'

The Inflected and non-Inflected Infinitives alternate in all but the following three embedded contexts, which allow only non-Inflected Infinitives:

- as complements to intransitive subject control predicates,

(101a) *O Governo   quer   o   relatório [**ser**   publicado].   (Infl. Inf.)
the government wants the   report   [to-be-3sg published].
(The government wants the report to be published.)

(101b) O Governo   quer   [**publicar**   o   relatório].   (Non-Infl. Inf.)
the government wants [to-publish the   report].
(The government wants to publish the report.)

- as interrogative clauses,

(102a) *Não   sabemos   a   quem   [**darmos**   o livro].   (Infl. Inf.)
not   know-1pl   to   whom [to-give-1pl   the book].
(We don't know whom to give the book to.)

(102b) Não   sabemos   a   quem   [**dar** o livro].   (Non-Infl. Inf.)
not   know-1pl   to   whom [to-give the book].
(We don't know whom to give the book to.)

- as relative clauses,

(103a) *Nem tem uma caneta [com que **escreverem**].   (Infl. Inf.)
nor have-3pl a pen [with which to-write-3pl].
(They don't even have a pen with which to write.)

(103b) Nem tem uma caneta [com que **escrever**].   (Non-Infl. Inf.)
nor have-3pl a pen [with which to-write].
(They don't even have a pen with which to write.)

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[80] All examples from Madeira (1994), pages 123-147.

Madeira (1994) concentrates on some of the cases in which Inflected Infinitives alternate with their Uninflected counterparts and only acknowledges the existence of the above three contexts in which such alternation is forbidden[81]. She offers no explanation why only Uninflected Infinitives are found in such clauses, leaving them for 'future work'.

In the absence of a Tense Head, the Nominative Case in Serbo-Croat is assigned by the Agreement feature cluster: P1+N (the Primary set of Person and Number markers). Alone, this cluster does not interfere with temporal marking and, as such, it can appear in tenseless clauses. Thus, P1+N clusters can be found in Infinitive clauses, where they assign the Nominative Case to the lexical subject. If the subject of the Infinitive Clause is non-overt, the problem of Nominative Case assignment is not relevant. Therefore, the presence of the Nominative Case assigner (P1+N) is not required. In other words, the Infinitive does not need to be inflected for P1+N if the subject is not phonetically realised. Let us look at the Portuguese examples again, marking the subordinate clause boundaries and inserting PRO where appropriate.

4.1.1. As Complements to intransitive subject control predicates:

(104a) *O Governo quer o relatório [PRO **ser** publicado]. (Infl. Inf.)
the government wants the report [PRO to-be-3sg published].
(The government wants the report to be published.)
(104b) O Governo quer [PRO **publicar** o relatório]. (Non-Infl. Inf.)
the government wants [PRO to-publish the report].
(The government wants to publish the report.)

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[81] Madeira (1994) claims that there are eight contexts in which Inflected Infinitival clauses are found embedded and in which they alternate with non-Inflected infinitives:
a) as complements to declarative predicates,
b) as complements to factive predicates,
c) as subject clauses,
d) as adjunct clauses introduced by a preposition,
e) as complements to perception verbs,
f) as complements to causative predicates,
g) as complements to object control predicates, and
h) as complements to transitive subject control predicates.
She mentions three more cases in which only non-Inflected Infinitives are allowed, but offers no explanation. (These are the three contexts that we have tackled above.):
i) as complements to intransitive subject control predicates,
j) as interrogative clauses, and
k) as relative clauses.
Concentrating only on cases (a-d), she makes the following conclusions (page 201):
"... I have argued in this paper that subject-auxiliary inversion in inflected infinitival clauses is a consequence of Agr-to-C movement. Such a movement is forced by the checking requirements of Agr, and it is made possible by the nominal properties of the infinitival C. This nominal C is incompatible with lexical verbs, and therefore inversion with lexical verbs is generally impossible. The cases where no inversion is found were accounted for by assuming an intermediate projection between CP and IP in factive clauses and assuming that Agr can be checked in I clauses headed by a null or overt prepositional complementizer..."

With subject control predicates, no overt subject is allowed in the lower clause. Keeping in mind the claims which I have made in the preceding section on Serbo-Croat Nominative Case assignment, it seems logical that, since there is no overt subject in the lower clause, there is no need for the Infinitive to be inflected for Agreement, as the non-overt subject NP does not require Case.

4.1.2. As Interrogative clauses

(105a) *Não sabemos a quem [PRO **darmos** o livro]. (Infl. Inf.)
  not know-1pl to whom [PRO to-give-1pl the book].
  (We don't know whom to give the book to.)

(105b) Não sabemos a quem [PRO **dar** o livro]. (Non-Infl. Inf.)
  not know-1pl to whom [PRO to-give the book].
  (We don't know whom to give the book to.)

Again, the reference of the subject of the lower clause is linked to the subject of the main clause. Once more, since the subject of the lower clause is not phonetically realised, there is no need for the Infinitive to be inflected for Agreement, as the non-overt subject NP does not require Case.

4.1.3. As relative clauses

(106a) *Nem têm uma caneta [PRO com que **escreverem**]. (Infl. Inf.)
  nor have-3pl a pen [PRO with which to-write-3pl].
  (They don't even have a pen with which to write.)

(106b) Nem têm uma caneta [PRO com que **escrever**]. (Non-Infl. Inf.)
  nor have-3pl a pen [PRO with which to-write].
  (They don't even have a pen with which to write.)

Again, the lower clause does not contain an overt subject. *Com que* 'with which' is an adverbial. Again, there is no need for an Inflected Infinitive. Invariably, all Portuguese examples of clauses with Inflected Infinitives always contain an overt subject NP in the Nominative, which may precede or follow the Inflected Infinitive[82].

The only case when the lower clause with Inflected Infinitive form is allowed to appear without an overt subject NP is when that subject is realised as PRO and when the subject of the main clause is also pro, and they both have the same reference.

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[82] A few more examples from Madeira (1994):
a) Elas pensam [ter a policia mentido.]
  They think-3rd pl [to-have-3rd sg the police lied.]
  (They think that the police have lied.)
b) Eu lamento [eles terem perdido os documentos.]
  I regret-1st sg [they to-have-3rd pl lost the documents.]
  (I regret that they have lost the documents.)
c) E possivel [eles terem perdido o comboio.]
  is possible [they to-have-3rd pl missed the train.]
  (It is possible that they have missed the train.)

4.2. Bulgarian

Bulgarian also has Inflected Infinitive clauses with an overt subject in the Nominative .

(107) Iskam   [da [**vie**   **kupjate**   knjiga.]
     (pro) want-1stsg [that [you-Nom   buy-3rdpl a book]
     (I want you to buy a book.)

4.3. Polish

(108) Chce   [ze [(ty)   bys   widzial krolika].
     (pro) want-1stsg [that [(you-Nom) cond-2ndsg seen   rabbit]
     (I want you to see the rabbit.)[83]

4.4. Czech

(109) Ucitel mi rekl   [a   [(ja)   bych   mluvil hlasite].
     Teacher me told [that [(I-Nom) cond-2ndsg spoken loudly]
     (The teacher told me to speak loudly.)[84]

4.5. Rumanian

(110) Vrea   [ca [**Petru**   sa   **citeasca**].
     (pro) want-3rdsg [that [Peter-Nom Modal read-3rdsg]
     (He wants Peter to read.)[85]

4.6. Albanian

(111) Dua   [qe [**Brixhida**   te   **kendoje**].
     (pro) want-1stsg [that [Brigitte-Nom Modal sing-3rdsg]
     (I want Brigitte to sing.)[86]

4.7. Greek

(112) δietaksan   [na [**filisi**   o Jianis   ti **Maria**].
     (pro) ordered-3rdpl [that [kiss-3rdsg the-John-Nom the-Maria]
     (They ordered John to kiss Maria.)

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[83] The example taken from Borsley and Rivero (1992), pages 373-422.

[84] As in the preceding footnote.

[85] Rivero (1994) deals with ` the organization of the functional categories of the Balkan clause and its interaction with V-movement within the GB perspective inspired by Pollock (1989)...`. This article has nothing to do with the issue of Inflected Infinitives or the Case assignment. It is accidental that it containes few examples with embedded Infinitive clauses. The Albanian and Rumanian examples above are taken from this article.

[86] As in the preceding footnote.

The examples above are taken from various linguistic articles whose area of interest is not related to Inflected Infinitives or Case assignment. It was accidental that they contained a few examples of embedded Infinitive clauses, which I have used here.

Although I have not had enough data to test whether Inflected Infinitives exist in the rest of the Slavic languages and whether the Nominative Case of their overt subjects is assigned and checked in the same way, the conclusions made so far strongly suggest that the rest of the Slavic languages, and possibly some more world languages, must behave in the same way.

5) Related Issue – PRO and Infinitive Clause

5.1 Serbo-Croat Infinitive clauses

The Uninflected Infinitive in Serbo-Croat is formed by adding the Infinitive marker -*ti* to the verb stem, as in: *spava+ti = spavati* 'to sleep'
The Inflected Infinitive in Serbo-Croat is formed by adding the P1+N cluster to the verb stem, as in: *spava+ju= spavaju* 'to sleep', 3rd+plur)

We shall now look at the four types of verbs that behave differently with respect to their Infinitival complements: *htjeti* 'to want', *pokušati* 'to try', *dozvoliti* 'to allow' and *vjerovati* 'to believe'.

All the subordinate clauses below are Infinitive clauses, some inflected and some not. These examples represent all the possible combinations of overt complementizer, PRO and overt subject of Infinitivals, with the same or a distinct reference of the main and Infinitive clause subjects. Notice that the complementizer *da* 'that' is either obligatory or ill-formed, never optional. Analysing both Inflected and Uninflected Infinitives, we compare cases where the subject of the main clause and the subject of the subordinate clause have the same reference with those where they have distinct reference in the observations below.

If the subject of the main and the Infinitival clause have the *same* reference, then both Uninflected and Inflected Infinitives are allowed. If the subject of the main and the Infinitival clause have *different* reference, Uninflected Infinitives are not allowed, while Inflected Infinitives are allowed.

Every grammatical Inflected Infinitive clause must be a CP, headed by the overt complementizer *da* 'that'. Every grammatical Uninflected Infinitive clause must be an IP, whose subject must be non-overt and must be co-referential with an argument of the main clause. Within the data that follows, the grammatical examples are given in bold.

5.1.1. *Pokušati* 'to try' and its Infinitival complements

Same reference
Uninflected Infinitives
(113) **Saša$_i$ pokušava [PRO$_i$ spavati.]**
  Sasha$_i$ tries [PRO$_i$ to sleep].
(114) *Saša$_i$ pokušava [on$_j$ spavati.]
  Sasha$_i$ tries [he$_j$ to sleep].
(115) *Saša$_i$ pokušava [da [PRO$_j$ spavati.]]
  Sasha$_i$ tries [that [PRO$_j$ to sleep]].
(116) *Saša$_i$ pokušava [da [on$_j$ spavati.]]
  Sasha$_i$ tries [that [he$_j$ to sleep]].

Different reference

(117) *Saša$_j$ pokušava [PRO$_i$ spavati.]
  Sasha$_i$ tries [PRO$_i$ to sleep].
(118) *Saša$_j$ pokušava [oni$_i$ spavati.]
  Sasha$_i$ tries [they$_i$ to sleep].
(119) *Saša$_i$ pokušava [da [PRO$_i$ spavati.]]
  Sasha$_i$ tries [that [PRO$_i$ to sleep]]
(120) *Saša$_i$ pokušava [da [oni$_i$ spavati.]]
  Sasha$_i$ tries [that [they$_i$ to sleep]]

Inflected Infinitives

(121) *Saša$_i$pokušava [pro$_j$ spava.]
 Sasha$_i$ tries [pro$_j$ to sleep+3rdsg].

(122) *Saša$_i$pokušava [on$_j$ spava.]
 Sasha$_i$ tries [he$_j$ to sleep+3rdsg].

(123) **Saša$_i$pokušava [da [pro$_i$ spava.]]**
 Sasha$_i$ tries [that[pro$_i$ to sleep+3rdsg]

(124) *Saša$_i$ pokušava [da [on$_j$ spava.]]
 Sasha$_i$ tries [that[he$_j$ to sleep+3rdsg]]

(125) *Saša$_i$ pokušava [pro$_i$ spavaju.]
 Sasha$_i$ tries [pro$_i$ to sleep+3rd pl]

(126) *Saša$_i$ pokušava [oni$_i$ spavaju.]
 Sasha$_i$ tries [they$_i$ to sleep+3rd pl]

(127) *Saša$_i$ pokušava [da [pro$_i$ spavaju.]]
 Sasha$_i$ tries [that[pro$_i$ to sleep+3rd pl]]

(128) *Saša$_i$ pokušava [da [oni$_i$ spavaju.]]
 Sasha$_i$ tries [that[they$_i$ to sleep+3rd pl]]

As the verb *pokušati* 'to try' is a subject control verb, it is not possible to find a grammatical example in which the subject of the main and the subordinate clause have different references.

5.1.2. *Dozvoliti* 'allow' and its Infinitival complements

Same reference

Uninflected Infinitives

(129) *S$_j$ dozvoljava [PRO$_i$ spavati.]
 S$_j$ allows [PRO$_j$ to sleep].

(130) *S$_j$ dozvoljava [on$_j$ spavati.]
 S$_j$ allows [he$_j$ to sleep].

(131)*S$_j$ dozvoljava [da [PRO$_i$ spavati.]]
 S$_j$ allows [that [PRO$_j$ to sleep]].

(132)*S$_j$ dozvoljava [da [on$_j$ spavati.]]
 S$_j$ allows [that [he$_j$ to sleep]].

(133)*S$_j$ dozvoljava M$_i$ [PRO$_i$ spavati]
 S$_j$ allows M$_i$ [PRO$_j$ to sleep].

(134)*S$_j$ dozvoljava M$_i$ [ona$_j$ spavati.]
 S$_j$ allows M$_i$ [she$_i$ to sleep].

(135)*S$_j$ dozvoljava M$_i$ [da[PRO$_i$ spavati]]
 S$_j$ allows M$_i$ [that[PRO$_j$ to sleep]].

(136)*S$_j$ dozvoljava M$_i$ [da[ona$_j$ spavati]]
 S$_j$ allows M$_i$ [that[she$_j$ to sleep]].

Different reference

(137)*S$_j$ dozvoljava [PRO$_i$ spavati.]
 S$_j$ allows [PRO$_i$ to sleep].

(138)*S$_j$dozvoljava [M$_i$ spavati.]
 S allows [M$_i$ to sleep].

(139)*S$_j$ dozvoljava [da [PRO$_i$ spavati.]]
 S$_j$ allows [that [PRO$_i$ to sleep]]

(140)*S$_j$ dozvoljava [da [M$_i$ spavati]]
 S$_j$ allows [that [M$_i$ to sleep]]

(141)**S$_j$ dozvoljava M$_i$ [PRO$_i$ spavati]**
 S$_j$ allows M$_i$ [PRO$_i$ to sleep].

(142)*S$_j$ dozvoljava M$_i$ [ona$_i$ spavati.]
 S$_j$ allows M$_i$ [she$_i$ to sleep].

(143)*S$_j$ dozvoljava M$_i$ [da[PRO$_i$ spavati]]
 S$_j$ allows M$_i$ [that[PRO$_i$ to sleep]].

(144)*S$_j$ dozvoljava M$_i$ [da[ona$_i$ spavati]]
 S$_j$ allows M$_i$ [that[she$_i$ to sleep]].

Inflected Infinitives

(145)*S$_j$dozvoljava [pro$_j$ spava.]
 S$_j$ allows [pro$_j$ to sleep+3rdsg].

(146)*S$_j$dozvoljava [on$_j$ spava.]
 S$_j$ allows [he$_j$ to sleep+3rdsg].

(147)*S$_j$dozvoljava [da [pro$_j$ spava.]]
 S$_j$ allows [that[pro$_j$ to sleep−3rdsg]

(148)*S$_j$ dozvoljava [da [on$_j$ spava.]]
 S$_j$ allows [that[he$_j$ to sleep−3rdsg]]

(149)*S$_j$ dozvoljava M$_i$ [pro$_j$ spava]
 S$_j$ allows M$_i$ [pro$_j$ to sleep+3rdsg].

(153)*S$_j$dozvoljava [pro$_i$ spava.]
 S$_j$ allows [pro$_i$ to sleep−3rdsg]

(154)*S$_j$ dozvoljava [M$_i$ spava.]
 S$_j$ allows [M$_i$ to sleep+3rdsg]

(155)**S$_j$ dozvoljava [da [ona$_i$ spava.]]**
 S$_j$ allows [that [she$_i$ to sleep+3rdsg]]

(156)**S$_j$ dozvoljava [da [M$_i$ spava]]**
 S$_j$ allows [that [M$_i$ to sleep−3rdsg]]

(157)*S$_j$ dozvoljava M$_i$ [pro$_i$ spava]
 S$_j$ allows M$_i$ [pro$_i$ to sleep−3rdsg].

(150)*S_j dozvoljava M_i [she$_j$ spava.]
　　S_j allows M_i [she$_j$ to sleep+3^{rd}sg].
(151) *S_j dozvoljava M_i [da [pro$_j$ spava.]]
　　S_j allows M_i [that[pro$_j$ to sleep+3^{rd}sg]].
(152)*S_j dozvoljava M_i [da [ona$_j$ spava.]]
　　S_j allows M_i [that[she$_j$ to sleep+3^{rd}sg]].

(158)*S_j dozvoljava M_i [she$_i$ spava.]
　　S_j allows M_i [she$_i$ to sleep+3^{rd}sg].
(159)S_j **dozvoljava M_i [da [pro$_i$ spava.]]**
　　S_j allows M_i[that[pro$_i$ to sleep+3^{rd}sg]]
(160)*S_j dozvoljava M_i [da [ona$_i$ spava.]]
　　S_j allows M_i [that[she$_i$ to sleep+3^{rd}sg]].

As the verb *dozvoliti* 'to allow' is an object control verb, it is not possible to find a grammatical example in which the subject of the main and subordinate clause have the same reference.

5.1.3. *Htjeti* 'to want' and its Infinitival complements

Uninflected Infinitives
(161) **Saša$_j$ hoće [PRO$_j$ spavati.]**
　　S_j wants [PRO$_j$ to sleep].
(162)*Saša$_j$ hoće [on$_j$ spavati.]
　　S_j wants [he$_j$ to sleep].
(163)*Saša$_j$ hoće [da [PRO$_j$ spavati.]]
　　S_j wants [that [PRO$_j$ to sleep]].
(164)*Saša$_j$ hoće [da [on$_j$ spavati.]]
　　S_j wants [that [he$_j$ to sleep]].
Inflected Infinitives
(169) *Saša$_j$hoće [pro$_j$ spava.]
　　S_j wants [pro$_j$ to sleep+3^{rd}sg].
(170) *Saša$_j$hoće [on$_j$ spava.]
　　S_j wants [he$_j$ to sleep+3^{rd}sg].
(171) **Saša$_j$hoće [da [pro$_j$ spava.]]**
　　S_j wants [that [pro$_j$ to sleep+3^{rd}sg]
(172) *Saša$_j$ hoće [da [on$_j$ spava.]]
　　S_j wants [that [he$_j$ to sleep+3^{rd}sg]]

(165)*Saša$_j$ hoće [PRO$_i$ spavati.]
　　S_j wants [PRO$_i$ to sleep].
(166)*Saša$_j$ hoće [oni$_i$ spavati.]
　　S_j wants [they$_i$ to sleep].
(167)*Saša$_j$ hoće [da [PRO$_i$ spavati.]]
　　S_j wants [that [PRO$_i$ to sleep]]
(168)*Saša$_j$ hoće [da [oni$_i$ spavati.]]
　　S_j wants [that [they$_i$ to sleep]]

(173)*Saša$_j$ hoće [pro$_j$ spavaju.]
　　S_j wants [pro$_i$ to sleep+3^{rd}pl]
(174)*Saša$_j$ hoće [oni$_i$ spavaju.]
　　S_j wants [they$_i$ to sleep+3^{rd}pl]
(175)Saša$_j$ **hoće [da [pro$_i$ spavaju.]]**
　　S_j wants [that [pro$_j$ to sleep+3^{rd}pl]]
(176)Saša$_j$ **hoće [da [oni$_i$ spavaju.]]**
　　S_j wants [that [they$_i$ to sleep+3^{rd}pl]]

Grammatical clauses are given in bold (161), (171), (175) and (176). In the examples (161) – (172), the subject of the Infinitival clause has the same reference as the subject of the main clause, while in the examples (173) – (176), they are different.

5.1.4. *Vjerovati* 'believe' and its Infinitival complements

Uninflected Infinitives
(177).*Saša$_j$ vjeruje [PRO$_j$ spavati.]
　　S_j believes [PRO$_j$ to sleep].
(178) *Saša$_j$ vjeruje [on$_j$ spavati.]
　　S_j believes [he$_j$ to sleep].
(179) *S_j vjeruje [da [PRO$_j$ spavati.]]
　　S_j believes [that [PRO$_j$ to sleep]].
(180) *S_j vjeruje [da [on$_j$ spavati.]]
　　S_j believes [that [he$_j$ to sleep]].

(181)*Saša$_j$ vjeruje [PRO$_i$ spavati.]
　　S_j believes [PRO$_i$ to sleep].
(182) *Saša$_j$ vjeruje [oni$_i$ spavati.]
　　S_j believes [they$_i$ to sleep].
(183)*S_j vjeruje [da [PRO$_i$ spavati.]]
　　S_j believes [that [PRO$_i$ to sleep]]
(184) *S_j vjeruje [da [oni$_i$ spavati.]]
　　S_j believes [that [they$_i$ to sleep]]

Inflected Infinitives

(185) *S.ⱼvjeruje [proⱼ spava.]
    S.ⱼ believes [proⱼ to sleep+3^{rd}sg].

(189)*S.ⱼ vjeruje [proⱼ spavaju.]
    S.ⱼ believes [proᵢ to sleep+3rd pl]

(186) *S.ⱼvjeruje [onᵢ spava.]
    S.ⱼ believes [heⱼ to sleep+3^{rd}sg].

(190)*S.ⱼ vjeruje [oniᵢ spavaju.]
    S.ⱼ believes [theyᵢ to sleep+3rd pl]

(187) **S.ⱼvjeruje [da [proᵢ spava.]]**
    S.ⱼ believes[that[proᵢ to sleep+3^{rd}sg]

(191) **S.ⱼ vjeruje [da [proᵢ spavaju.]]**
    S.ⱼ believes[that[proᵢ to sleep+3rd pl]]

(188) *S.ⱼ vjeruje [da [onᵢ spava.]]
    S.ⱼ believes[that[heⱼ to sleep+3^{rd}sg]]

(192) **S.ⱼ vjeruje [da [oniᵢ spavaju.]]**
    S.ⱼ believes[that[theyᵢ to sleep+3rd pl]]

The verb *vjerovati* 'to believe' is both a subject and an object control verb, so the subject of the main and subordinate clause may have the same or different reference. For convenience, I repeat the observations concerning (177) – (192): if the subject of the main and the Infinitival clause have the *same* reference, then both Uninflected and Inflected Infinitives are allowed. If the subject of the main and the Infinitival clause have *different* reference, Uninflected Infinitives are not allowed, while Inflected Infinitives are allowed. Every grammatical Inflected Infinitive clause must be a CP, headed by the overt complementizer *da* 'that'. Every grammatical Uninflected Infinitive clause must be an IP, whose subject must be non-overt and co-referential with the subject of the main clause.

Before I give the analysis of the above data, I refer to Bošković (1996) where he argues for the Case-theoretic approach to the phenomena of Infinitival complementation and the distribution of PRO. I disagree with the fundamental claims that he makes and I hope to be able to offer an alternative account of the phenomenon.

5.2. Bošković (1996) "Selection and the Categorial Status of Infinitival Complements"

The article starts with Grimshaw's (1979)[87] claim that lexical entries for predicates contain information about both what syntactic categories (c-selection) and what semantic categories (s-selection) they take as their complement. We also need to mention the so-called l-selection, which selects lexical items and features associated with them that cannot be reduced to either c-selection or s-selection. L-selection does not refer to syntactic categories but to specific lexical items and specific features such as [+/- finite] (an example of l-selection is selection of some prepositions, such as *for* or *of*)[88].

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[87] Grimshaw (1979), pages 279-326, argues that verbs that take the same semantic types of complements may or may not take an NP object (*John inquired what the time was./*John inquired the time*). She therefore insists that there is an autonomy between c-selection and s-selection.

[88] Bošković (1996) states that Pesetsky (1982) and Pesetsky (1992) reject c-selection entirely and replaces it by the Case Filter: whether or not the verb takes an NP object depends on whether or not the verb assigns Case. A potential argument against Pesetsky is provided by the fact that some verbs select IPs as their complements and some select CPs. Bošković's article is an attempt to account for these cases through the Case-theoretic approach.

Boskovic (1996) refers to Chomsky and Lasnik's (1993) proposal that, being an argument NP, PRO is always Case marked[89]. Under the standard binding theoretic analysis, control verbs ('try') c-select CPs, ECM verbs ('believe') c-select IPs. Bošković gets rid of c-selection by rejecting the binding theoretic and adopting the Case theoretic approach.

ECM Infinitivals (the 'believe' type) are [-Tense, -Finite]. They cannot check the Null Case and they require a lexical subject (193a) and (193b). [-Tense, -Finite] Infinitivals cannot assign the Null Case, thus PRO is illegitimate. Instead, a lexical subject is used and it moves outside the Infinitival clause to receive Case from the main clause verb. This move is grammatical as it is an instance of a move out of a non-Case position. The first sentence (193a) is illegitimate regardless of whether the embedded clause is a CP or an IP. The second sentence (193b) is only grammatical if the embedded clause is an IP, otherwise the lexical subject would not be able to move across the CP boundary. Thus, the Case theoretic approach renders c-selection redundant.

(193a) *John believed [**PRO** to be crazy].
(193b) John believed him [t to be crazy].

Control Infinitivals ('try' type) are [+Tense, -Finite]. They check the Null Case and their subject is a PRO (194a) and (194b). [+Tense, -Finite] Infinitivals assign the Null Case. Thus the lexical subject in (194a) cannot receive the 'normal' Case within the Infinitival clause and has to move out of it. However, since [+Tense, -Finite] infinitivals assign the Null Case, their subject position still counts as a Case position and the move out of a Case position is illegitimate, ruled out by the Last Resort Principle. As no movement is needed in the second example, (194b), it is legitimate whether the embedded clause is a CP or an IP.

(194a) *John tried **Maria** [t to leave].
(194b) John tried [**PRO** to leave].

The complements of the *want* class of verbs takes both PRO and lexical subjects. (195a) is straightforward, but (195b) is potentially problematic for the Case theoretic approach: *him* cannot be Case-checked in the Infinitival clause, and cannot move out of it as that move would be a move out of a Case position.

(195a) John wants [**PRO** to leave].
(195b) John wants **Maria** [t to leave].

Bošković (1996) states that Bresnan (1979)[90], Chomsky (1981), Snyder and Rothstein (1992) all agree that the Infinitival complement in the second example is headed by a null complementizer, a non-overt counterpart of *for* in: *John wants for her to leave* (*her* assigned Accusative by *for*).

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[89] Chomsky and Lasnik (1993), pages. 506-569. On this account, PRO is marked for null Case which it checks through the Spec-Head checking configuration with the non-finite INFL. PRO must undergo NP movement from a non-Case position and is never allowed to undergo NP movement from a Case position.

[90] Bresnan (1979) claims that *for* has a semantic role and specifies a purpose, goal, reason or cause.

This is a result of the l-selectional properties of *want*, which optionally l-selects the prepostional complementizer *for*[91]. Bošković gets rid of l-selection by allowing the complementizer *for* to appear freely in Infinitival clauses, as long as its meaning is compatible with the meaning of the main clause verb. PRO is Case-checked under Spec-Head Agreement by a [+Tense, -Finite] INFL. The possibility of having PRO in a certain position provides the evidence that the position is a Case position.

Bošković then refers to Kayne (1984) who noticed a systematic difference between French and English Infinitivals: French [-Tense, -Finite] Infinitivals can still contain PRO. Regardless of their Tense specification, French non-finite clauses can check the Null Case and all that is needed is the presence of a [-Finite] Tense[92].

In the summary, Bošković claims that the traditional c-selection and CP deletion accounts of Infinitival complements should be fully replaced by the Case theoretic approach. In this way, Infinitival complements can be allowed to freely vary between IP and CP within the limits of s-selectional and l-selectional properties of the main clause verb, the Case requirements of the Infinitival subjects and the ECP.

The Principle of Economy of Representation (Law, 1991)[93] imposes the IP status on null operator relatives not introduced by *that*, finite declarative complements (*I believe [John likes Mary.]*, etc). It allows both finite and non-finite complements of *believe* to be IPs.

(196a) John believes Mary [ᵢₚ t **was a teacher**].
(196b) John believes Mary [ᵢₚ t **to be a teacher**].

Independent evidence that the control Infinitivals are always IPs is provided by the interpretation of PRO. The Binding Theory does not seem to be helpful here as it regards PRO as a pronominal anaphor, never as just an anaphor or just a pronominal. It is, however, well known that PRO sometimes behaves as a pronominal and sometimes as an anaphor.

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[91] Kiparsky and Kiparsky (1970), pages. 141-173, observe that the complementizer *for* appears only with a kind of 'emotive' predicate.
[92] Kayne (1984) gives the example:
  Pierre croit [PRO avoir convaincu son auditore]
(Pierre believes to have convinced his audience)
On the other hand French small clauses, according to Bošković (1996) , do not contain Tense at all, cannot check null Case, require lexical subjects and these subjects move out of small clauses (out of non-Case position) to receive Case:
  Pierre jugeait Paul [t coupable].
  (Pierre judged Paul guilty)
[93] Law (1991) on The Principle of Economy of Representation: 'Provided that the lexical requirements of relevant elements are satisfied, if two representations have the same lexical structure, and serve the same function, then the representation that has fewer projections is to be chosen as THE syntactic representation serving that function.' (from Bošković, 1996)

Governed PRO is incompatible with the Binding Theory, which requires that PRO is always ungoverned.[94] The conclusion is that the failure of obligatory PRO control here is the result of the CP status of Infinitival complements. On the other hand, with *try* type verbs, obligatory control is always present and this is due to the fact that the Infinitival complement of these verbs can never be a CP.

When PRO must refer to a particular NP within a particular domain, it is an anaphor. When locally free in reference, it is a pronominal. More precisely, when PRO is governed it has a governing category and must be interpreted anaphorically – must be bound within its governing category.

When the Infinitival complement containing PRO is a CP, the CP/IP pair of the Infinitival blocks the government of PRO. Since the government of PRO is blocked, obligatory control (anaphoric interpretation) cannot be established under the governed anaphora approach, the Phi-features of PRO are then licensed pronominally on pragmatic/semantic grounds.

The governed anaphora account of the interpretation of PRO is fully compatible with the Case-theoretic approach.

5.3. Criticism of Bošković's (1996) and the alternative solution

In Chapter III, Section 3, pages 91-93, on Nominative Case assignment and checking, we compared English and Serbo-Croat Infinitival clauses. The most striking difference was the fact that ECM (Exceptional Case Marking) is allowed in English, but not in Serbo-Croat. Now that we know that Serbo-Croat has Inflected Infinitives, we can explain the difference between the two languages. If Inflected Infinitives are possible in this language and if Inflected Infinitives can assign Case, then there is no need for the subject of the Infinitival Clause to raise above it. The subject receives its Case clause internally, from the Person and Number cluster on the Inflected Infinitive.

ECM in Serbo-Croat is ruled out by the Economy principle that states that a movement of any kind is a last resort measure, performed only after all other solutions have failed. It is more costly to move the subject outside the Infinitival clause than to inflect the Infinitive. Thus, ECM is illegal as a more cost-effective option is available. In English, Inflected Infinitives are not an option and ECM is the last resort. In English, verbs that take Infinitival complements are either ECM verbs or control verbs.

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[94] Bošković (1996) states that Bouchard (1984), Hornstein and Lightfoot (1987), Franks and Hornstein (1992), Koster (1984), all argue for the existence of governed anaphoric PRO. They note that, in contast to PRO in the complements of *try* type verbs, PRO in the complements of the verbs that s-select a question, which must be a CP, is not obligatorily controlled.
John asked [CP how [IP PRO to behave oneself]].
This is the only case in which arbitrary PRO is allowed although a potential antecedent is available. This is also the only example of a PRO Infinitival complement with CP status.

Bošković (1996) distinguishes between them by saying that:

- ECM verbs are [-Tense, -Finite], cannot assign the Null Case and take lexical subjects,
- control verbs are [+Tense, -Finite], assign the Null Case and thus take PRO subjects[95].

But what about the verbs like 'want' whose semantics sometimes choose the first, and sometimes the second type of the Infinitival complements? In other words, the Infinitival complements of this verb sometimes take PRO and sometimes lexical subject that has to raise above the Infinitival for the ECM:

(197a) I want to [**PRO** to leave]
(197b) I want **Maria**₁ [t₁ to leave]

Bošković (1996) tries to solve the problem by insisting that Bresnan (1979), Chomsky (1981) and Snyder and Rothstein (1992) all agree that the Infinitival complement in the second example is headed by a null complementizer, a non-overt counterpart of 'for'[96] in:

(197c) I want [for **Maria**₁ [t₁ to leave]]   'Maria' assigned Accusative by 'for'

I would like to offer the alternative analysis and the claims that I make for Serbo-Croat:

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[95] In this way, he gets rid of c-selection. But, he still relies on s-selection to determine whether the verb in question specifies a time frame unrealized with respect to the main clause Tense (control verbs) or they have no independent Tense specification and their Tense is recovered through the main clause Tense (ECM verbs). According to Bošković (1996), some Infinitivals specify a time frame which is unrealized with respect to the Tense of the main clause, and he assigns a [+Tense, -Finite] feature to them (following Martin, 1992). These Infinitivals, which happen to be control Infinitivals, are able to assign null Case to the PRO:

John tried [PRO to leave].

The semantics of some other verbs, on the other hand, chooses Infinitivals that have no independent Tense specification and their Tense is linked to and recovered through the Tense of the main clause. They are [-Tense, -Finite] and *cannot* assign the Null Case. Therefore, their subject can never be PRO, but only a lexical subject. A lexical subject cannot be assigned the Null Case, thus it raises outside the infinitival clause to receive the Accusative Case from the main clause verb. These verbs happen to be ECM verbs:

*John believed **Maria** [t to be crazy].*   *Maria* = Accusative

[96] This is a result of the l-selectional properties of *want*, which optionally l-selects the prepositional complementizer *for*. Bošković tries to gets rid of l-selection as well by allowing the complementizer *for* to appear freely in any Infinitival clause, as long as its meaning is compatible with the meaning of the main clause verb. Here, he chooses to ignore the The Principle of Economy of Representation (Law, 1991), which he heavily relies on in a different part of the same article:

      'Provided that the lexical requirements of relevant elements are satisfied, if
      two representations have the same lexical structure, and serve the same
      function, then the representation that has fewer projections is to be chosen
      as THE syntactic representation serving that function.'

In other words, the Principle contradicts the 'null *for*' analysis of the last sentence by clearly stating that - if the complementizer *for* is non-overt – it does not exist! Consequently, the subordinate clause is not CP but IP and its correct structure is:

*I want **Maria**ⱼ [tⱼ to leave]*

1. PRO is assigned the Null Case iff it is controlled (by subject, object or arbitrarily).
2. PRO acquires the Null Case from its controller, not from the Infinitive.
3. The semantics of the main clause verb is irrelevant in Null Case assignment.
4. Uninflected Infinitives cannot assign any Case in any language.
5. Inflected Infinitive clauses can only contain PRO and never lexical subjects or pro.
6. Inflected Infinitives can assign Case.
7. The Person and Number cluster on Inflected Infinitives also appears in finite clauses. In both cases, it assigns Nominative Case (to lexical subjects or small pro).
8. Inflected Infinitive clauses cannot contain PRO, but only lexical subjects or small pro.

Uninflected Infinitive clause with *pokušati* 'try' type verbs

(198) **S.ᵢ pokušava [PROᵢ   spavati.]**
     S.ⱼ tries [PROⱼ to sleep].

Since *pokušati* 'try' is a subject control verb only, PRO is controlled by the main clause subject *Saša*. It is co-indexed with it and receives its reference and phi-features from it. There is no reason why it should not receive its Case from it as well. If an overt complementizer is introduced, the Infinitival complement becomes a CP, the control is blocked and the Case requirement is violated, as PRO is now not Case-marked:

(199)*Sašaᵢ pokušava [**da** [**PROᵢ**   spavati.]
     * *S.ⱼ tries [that [PROⱼ to sleep].*

The reference of PRO is not established, neither are its phi-features. I conclude that it does not receive its Case either. If the non-finite inflection was able to assign the Null Case in the grammatical example, there is no reason for it not to be able to do the same in the ungrammatical one. I take this to be proof that non-finite inflection is not involved in Case assignment. An alternative Case assigner is needed and the Infinitive gets inflected for Person and Number (as below) that are responsible for Nominative Case marking in Serbo-Croat. As Person and Number assign the Nominative Case in finite clauses as well, they should not be able to assign the Null Case. Therefore, the lexically null subject of the Infinitival clause above is not PRO but small pro:

Inflected Infinitives with *pokušati* 'try' type verbs

(200) **S.ⱼpokušava [da [proᵢ spava.]]**
     S.ⱼ tries [that[proⱼ to sleep+3ʳᵈsg]

Rejecting Chomsky's (1995) proposal that all subject Cases are assigned by Inflection, I would like to propose that the Null Case is assigned only through PRO control, within the antecedent chain, headed by an overt NP (subject of the main clause). In this way, the Null Case is still a structural Case. There is no reason why the above proposal should not apply to English as well. The only difference is that English does not offer an alternative Case (Inflected Infinitives).

Therefore, the CP status of the Infinitival complement is disallowed as PRO cannot receive its Case from anywhere else once PRO control is blocked.

(201) *S. tries [PRO to sleep].*
       **S. tries [that [PRO to sleep]].*

Now, let us look again at the object control verb *dozvoliti* 'allow'[97]. An uninflected Infinitive is allowed only in a main clause with an overt object, co-indexed with pro. An Inflected Infinitive with *pro* subject may appear in a main clause without or with an overt object.

Uninflected Infinitives with *dozvoliti* 'allow' type verbs

(202) **S.ⱼ dozvoljava Marijiᵢ [PROᵢ spavati]**
      S.ⱼ allows Mariaᵢ [PROᵢ to sleep].

PRO is controlled and marked for the Null Case by its controller – the object of the main clause: *Marija*. If that control is blocked by the CP/IP barrier, PRO does not receive its Case and the result is ungrammatical:

(203) ***Sašaⱼ dozvoljava Marijiᵢ [da [PROᵢ spavati]]**
      **S.ⱼ allows Mariaᵢ+Dat [that [PROᵢ to sleep].*

Inflected Infinitives with *dozvoliti* 'allow' type verbs

(204) **S.ⱼ dozvoljava Marijiᵢ [da [proᵢ spava.]]**
      S.ⱼ allows Mariaᵢ [that[proᵢ to sleep+3^{rd}sg]].

(205) **S.ⱼ dozvoljava [da [proᵢ spava.]]**
      S.ⱼ allows [that[proᵢ to sleep+3^{rd}sg]]

(206) **S.ⱼ dozvoljava [da [Marijaᵢ spava]]**
      S.ⱼ allows [that[Mariaᵢ to sleep+3^{rd}sg]]

If Case marking of the complement clause subject is solved clause-internally, then if the main clause can appear without an object, the result should still be grammatical as control is not needed with Inflected Infinitivals. The reference of the complement clause subject (pro) is recovered from the Agreement inflection on the Infinitive (3rd person, singular). Any small pro can be replaced by a lexical subject. As Inflected Infinitives in Serbo-Croat can assign the Nominative Case, Serbo-Croat Infinitival complements can appear with an overt subject. Let us look at English object control verbs. As with English subject control verbs, blocking PRO control by the CP/IP barrier is illegitimate in this language as no alternative Case marking of PRO is available.

(207) Sasha allows Maria [PRO to sleep]
      Sasa allows Maria [that [PRO to sleep]]

---

[97] Please refer to page 104.

Now, let us analyse the *want* examples[98]. I dispute the analysis offered in Bošković (1996)[99] on two grounds:

- It is ruled out by The Principle of Economy of Representation (Law, 1991).
- My proposal of Case marking of PRO through PRO control handles this verb in the same way as the rest of the verbs that take Infinitival complements, without having to make it an exception.

According to The Principle of Economy of Representation (Law, 1991)[100], if the complementizer *for* is non-overt – it is not there. Consequently, the subordinate clause is not CP but IP and its correct structure is (208). But the data is handled in a better way in (209) where PRO is assigned the Null Case through object control.

(208) *I want him_j [t_j to leave]*
(209) *I want him_j [PRO_j to leave]*

SC Uninflected Infinitives with *htjeti* 'want' type verbs

(210) **Saša_i hoće [PRO_i spavati.]**
   S._j wants [PRO_j to sleep].

Inflected Infinitives with *htjeti* 'want' type verbs

(211) **Saša_i hoće [da [pro_i spava.]]**
   S._j wants [that [pro_i to sleep+3^{rd}sg]
(212) **Saša_i hoće [da [pro_i spavaju.]]**
   S._j wants [that [pro_i to sleep+3^{rd}pl]]
(213) **Saša_i hoće [da [oni_i spavaju.]]**
   S._j wants [that [they_i to sleep+3^{rd}pl]]

---

[98] Recall that this verb has to be treated as an exception by Chomsky (1995), Bresnan (1979), Chomsky (1981), Snyder and Rothstein (1992), Bošković (1996) and others. Bošković gives the following examples:

   I want [PRO to leave]
   I want [him to leave]

He admits that, since the first sentence is grammatical, it means that the subject position of the lower clause is a null Case position. Recall that possibility of having PRO in a certain position is proof that the position is Case marked. If the subject position of the lower clause is marked for null Case, then we cannot have a lexical subject in that position. But at the same time, the lexical subject *him* cannot move from that position as the move out of a Case position is illegitimate. To somehow get around this problem, they propose that the infinitival complement in the second example is headed by a null complementizer, a non-overt counterpart of *for*. They are forcing an invisible Case assigner into the structure:

   I want to [PRO to leave]
   I want Maria_i [t_j to leave] => *I want [(for) Maria_i [t_j to leave]]*
       'Maria' assigned Accusative by null 'for'

[99] Please see footnote 99.

[100] Provided that the lexical requirements of relevant elements are satisfied, if two representations have the same lexical structure, and serve the same function, then the representation that has fewer projections is to be chosen as THE syntactic representation serving that function.

The Infinitival clause subject in (211) is not co-indexed with the main clause one. As no control means no Case, the Infinitive gets inflected and the subject of the lower clause is small pro. Now, we examine ECM verbs. Having established that Serbo-Croat does not allow ECM, let us look at a Serbo-Croat counterpart of a typical English ECM verb, *to believe*.

(214) *John believes [she to be a teacher] => John believes her [PRO to be a teacher].

Having the earlier observations in mind, this is what one expects to happen in Serbo-Croat: As only control verbs ensure Null Case marking, only the Infinitive complements of control verbs can have PRO as their subject. Where PRO control is blocked, the subject of the Infinitival clause is either an overt NP or a small pro and the Infinitive must always be inflected for Person and Number. Thus, Inflected Infinitivals are always CPs.

Now, refer to the examples of Infinitival complements of the verb *vjerovati* 'to believe', page 105. The only three acceptable sentences are:

(215) **Saša$_i$ vjeruje [da [pro$_j$ spava.]]**
    S.j believes[that[pro$_j$ to sleep+3rdsg]

(216) **Saša$_i$ vjeruje [da [pro$_i$ spavaju.]]**
    S.j believes[that[pro$_i$ to sleep+3rdpl]]

(217) **Saša$_i$ vjeruje [da [oni$_i$ spavaju.]]**
    S.j believes[that[they$_i$ to sleep+3rdpl]]

However, tests show that the subordinate clauses above are not Infinitive clauses at all. As they all have the Present Tense form, they look like Inflected Infinitive clauses, but each one of them can be replaced with a clause whose tense differs, as can be seen below:

(218) **Saša$_i$ vjeruje [da [pro$_i$ je   spavao.]]**
    S$_j$ believes [that [pro$_i$ to be+3rdsg to sleep+masc+sg]
    (S believes that <u>he slept</u>)

(219) **Saša$_i$ vjeruje [da [pro$_i$ su bili spavali.]]**
    S$_j$ believes[that[pro$_i$ to be+3rdpl to be+masc+pl to sleep+msc+sg to sleep+3rdpl]]
    (S believes that they <u>had been sleeping</u>.)

(220) **Saša$_i$ vjeruje [da [oni$_i$ spavaju.]]**
    S$_j$ believes [that [they$_i$ to sleep+3rdpl]]
    (S believes that they <u>are sleeping</u>.)

If the predicate of a subordinate clause can have any temporal marking, then that subordinate clause must be a finite clause. On the other hand, if the subordinate clause is, in fact an Inflected Infinitive clause, it is not possible to replace their infinitival predicate with a temporally marked one, as shown below:

(221) **Saša očekuje [da [Marija dođe.]]**
Sasha is expecting [that [Maria to come+3rd sing]
(Sasha is expecting Maria to come.)

(222) ***Saša očekuje [da [je Marija došla.]]**
Sasha is expecting [that [Maria has+3rd sing come+3rd sing]
(*Sasha is expecting that Maria has come.)

The Serbo-Croat counterparts of English ECM verbs
- either do not take Infinitival complements at all, or
- they take Inflected Infinitivals whose subjects are lexical NPs or a small pro.

One more point to be made concerns the claim that Bošković (1996) makes for French ECM verbs. He refers to Kayne (1984) who notices that, contrary to English ECM verbs, French [-Tense, -Finite] Infinitivals can still contain PRO. Regardless of their Tense specification, French non-finite clauses can check the Null Case and all that is needed is presence of a [-Finite] Tense. He gives the examples:

(223) Pierre croit [**PRO** avoir convaincu son auditoire]
(Pierre believes to have convinced his audience)

French small clauses do not contain Tense, cannot check the Null Case, require lexical subjects and these subjects move out of small clauses (out of a non-Case position) to receive Case:

(224) Pierre jugeait **Paul** [t coupable].
(Pierre judged Paul guilty)

This is a second exception that forces Chomsky (1995), and Bošković (1996) to modify their proposals. To account for the verb *want*, they have to propose a null complementizer. To make allowance for the difference between English and French ECM complements, they allow parametric variation in the sense that English ECM verbs cannot assign the Null Case while French ones can. But we can now account for all the above examples and languages by simply saying that:
- a non-finite inflection can never assign the Null Case;
- Inflected Infinitives assign the Nominative Case to lexical NPs and small pro. They are also incapable of assigning the Null Case.
- the Null Case is assigned only through control (subject, object or arbitrary). The Null Case is passed onto PRO from its controller, together with its reference and the phi-features.

The French example above is, obviously, an example of subject control:

(225) **Pierre**_i croit [**PRO**_i avoir convaincu son auditoire]
(**Pierre**_i believes [**PRO**_i to have convinced his audience])

Under this analysis, English and French are NOT different. In both examples, PRO receives its Null Case (and its phi-features, and its reference) from its controller – the subject of the main clause (*Pierre*). If this is the case, then one expects the earlier sentence (225) to become ungrammatical if the control is blocked by CP/IP pair:

(226) *Pierre₁ croit [que [PRO₁ avoir convaincu son auditoire]
    (*Pierre₁ believes [that [PRO₁ to have convinced his audience])

The fact that French small clauses do not contain Tense is irrelevant. Under this analysis, all non-finite clauses are tenseless. All Infinitivals, whether Inflected or Uninflected, are [-Tense, -Finite]. Dividing them into [+T, -F] and [-T, -F] is unnecessary. Bošković (1996) suggests that the Null Case cannot be checked within small clauses and that lexical subjects have to move out of small clauses (out of a non-Case position) to receive Case:

(227) *Pierre jugeait Paul [t coupable].*
    (Pierre judged Paul guilty)

His statement is contradicted by this new analysis. All that one needs to bear in mind to account for all the above English, French and Serbo-Croat examples is: the Null Case can be checked anywhere, providing PRO is controlled. In the above small clause, the lexical subject has not moved out of the lower clause. What Bošković (1996) takes to be the lower clause subject is, in fact, the higher clause object that controls and Null Case marks the PRO subject of the complement clause. Hence the structure:

(228) Pierre jugeait Paul₁ [PRO₁ coupable].
    (Pierre judged Paul₁ [PRO₁ guilty])

The same works for both the English translation above and the Serbo-Croat one below:

(229) *Petar je smatrao Paul₁ [PRO₁ krivim]*

6)Summary

Serbo-Croat Agreement morphemes appear either in pairs or in groups of three, never alone. They combine in the following way:

1. Person+Number	(1st and 2nd person pronouns)
2. Gender+Number	(nouns and adjectives)
3. Person+Gender+Number	(3rd person pronouns)

Only the first (Person+Number) and the second (Gender+Number) clusters above are ever found on verbs.

Looking for the reason why Serbo-Croat does not allow Exceptional Case Marking (ECM), I have discovered that it is the Person+Number Agreement cluster that is responsible for Serbo-Croat Nominative Case assigning.

As this Nominative assigner is compatible with non-finite clauses, predicates of Infinitive clauses get inflected for Person+Number, whenever it is necessary for the purpose of Case assignment. ECM is disallowed on the grounds that movement is a measure of last resort and Serbo-Croat is able to assign the Nominative in an alternative way.

It is for this reason that a Person+Number morpheme cluster is contained in every finite form. In compound finite forms, it appears on AUX, allowing the main verb to attract Gender+Number. In simple finite forms, in the absence of AUX, the Gender+Number cluster is not allowed to attach to the main verb, as the Person+Number suffix has priority, due to its Case assigning quality.

Despite the fact that Inflected Infinitives are identical in structure to the Present and the Future II Finite, they are not finite clauses because Inflected Infinitives can never be replaced by a finite clause containing a predicate with a different finite form.

The SC way of Nominative Case assignment is not unique. Bulgarian, and very possibly the entire Slavic group, allows Inflected Infinitives in the same way as Serbo-Croat and it allows an overt subject in the Nominative in those clauses. The Inflected Infinitives found in Portuguese, Galician, Bulgarian, etc, differ from their non-inflected counterparts in two respects:
- they display Agreement morphology and
- they may take a lexical subject, which is assigned the Nominative Case.

At the end of this chapter, I comment on Bošković's "Selection and the Categorial Status of Infinitival complements" (1996) and offer an alternative account of PRO distribution that is able to deal all the cases in a uniform way, including those that Bošković (1996) treats as 'problematic' or as exceptions. The conclusions made are:

PRO is assigned Null Case iff it is controlled (by subject, object or arbitrarily);

PRO acquires the Null Case from its controller, not from the Infinitive;
The semantics of the main clause verb is irrelevant in Null Case assignment;
Uninflected Infinitives cannot assign any Case in any language;
Inflected Infinitive clauses, in languages that have them, can only contain PRO and never lexical subjects or small pro;
Inflected Infinitives can assign Case;
The Person and Number cluster that appears on Inflected Infinitives also appears in finite clauses and, in both cases, it assigns Nominative Case to lexical subjects or to small pro;
Inflected Infinitive clauses cannot contain PRO, but only lexical subjects or small pro.

Having established the purpose and the role of the Agreement markers in Serbo-Croat, the next, and final, step is to look into the way in which Aspect and Agreement co-operate in the process of temporal marking and interpretation.

In other words, the purpose of the following chapter is to establish the clausal structure in this language and move on to its LF operations.

V CLAUSAL STRUCTURE IN SERBO-CROAT

1) Introduction
2) The elementary word order and basic clause structure in Serbo-Croat
3) Nominative Case assignment/checking
4) The identity of the X projection
5) The individual contribution of the 'Tense' factors
6) Clausal structure and compositional feature checking
7) Summary

1) Introduction

The absence of Tense morphology, and thus a Tense projection, raises numerous questions:

How does Serbo-Croat communicate temporal information?
What is the structure of Serbo-Croat clauses?
Does the absence of a Tense projection make VP the highest phrase?
In some languages, i.e. French, Tense has a strong non-intrinsic and non-categorial V feature which has to be eliminated before LF. This feature overtly raises French main verbs to T. What is the situation in Serbo-Croat?
In some languages, Tense has a strong non-intrinsic and non-categorial NP feature, which has to be eliminated before LF. This feature overtly raises subject NPs to the [Spec, T] position. This analysis has replaced the traditional Extended Projection Principle. What is the situation in Serbo-Croat?
The Nominative Case is thought to be universally assigned and checked by Tense. As Tense does not exist in Serbo-Croat and as the Nominative Case is linked to the Person and Number cluster, how and where is Nominative Case assignment performed?

1.1. Chomsky (1995) and relevant basic assumptions regarding features

Chomsky (1995) claims that, among the features that appear in lexical entries, we distinguish between *formal* features, accessible in the course of the computation and others that are not: between the formal features [+/- N] and [+/- plural], and the semantic features [artifact].[101]

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[101] Chomsky (1995), page 230, states that the lexical entry of a lexical item contains three collections of features: Phonological features, such as [begins with a vowel],
        Semantic features, such as [artifact] and
        Formal features, such as [Nominal].

Formal features of a lexical item[102] are all the features other than the phonological and semantic ones. Some are *intrinsic* (either listed explicitly in the lexical entry or determined by properties so listed) and some *optional* (added as the lexical item enters numeration). Only functional categories may have strong features, checked by a categorial feature. Thus, strong features always require raising of a category and never, say, [Case], or a phi-feature.

Chomsky (1995) insists that, of all the functional categories, it is only Agreement that has no semantic properties, all the others (T, C, D) do. He uses this as one of the reasons to propose a universal ban on the Agreement projection. If it has no semantic content, it must not be present at LF. Only categories with a semantic value are allowed to project.

Types of features, according to Chomsky, are:
> categorial,
> phi-features,
> Case and
> strong categorial features.

They can also be divided into intrinsic and optional.[103]

The third way of dividing features is into:

+ Interpretable: categorial features and phi-features of nouns (not eliminated at LF) and -Interpretable: all the others (must be eliminated at LF).

Some features of lexical items enter into interpretation at LF, some not. Those that do are taken to be +Interpretable and must survive by LF, even if checked. Those that do not are -Interpretable features and must be checked and eliminated before LF.[104] Feature strength is an element of language variation - a formal feature may or may not be strong:

Phonological features are stripped away by Spell-Out and are thus available only to the phonological component; the others are left behind by Spell-Out, and the formal ones may continue to be accessed by the covert computation to LF.

[102] Lexical items are either substantive categories: nouns, verbs, adjectives, particles, ...
> or functional (non-substantive): T, C, Det, Agr.

[103] For example, Intrinsic to nouns: Intrinsic to verbs:
> categorial [Nominal],   categorial [Verbal], [Case]
> Person [3rd person],
> Gender [fem]
> Optional to nouns: Optional to verbs:
> non-categorial [Case], [Number]   non-categorial [phi-features], [Tense]

[104] Chomsky (1995), page 278, states that there is a formal assymetry that holds between a feature F of the checking domain of the target K and a sublabel F' of K. The difference between the checker (the target K with the sublabel F') and the checked (F within the checking domain) are:

- F' is always -Interpretable (strength of a feature, affixal feature, the Case assigning feature of T and V, phi-features of verbs and adjectives). The target does have Interpretable features, like categorial features, but these never enter into checking relations.

- F in the checking domain can be an +Interpretable feature, including categorial and phi-features."

If F is strong, then F is a feature of non-substantive category and F is checked by a categorial feature. If so, then nouns and main verbs do not have strong features[105], and a strong feature always calls for a certain category in its checking domain.

Chomsky (1995) reduces The Extended Projection Principle (EPP) to a strong D feature of I, and overt wh-raising to a strong D-feature of C (assuming wh- to be a variant of D). While Merge[106] is costless, movement is not: it only takes place when forced; and it is overt, violating Procrastinate[107] only when that is required for convergence.

Whenever possible, a checked feature is deleted (invisible at LF, but accessible to computation). Whenever possible, a deleted feature is erased (eliminated entirely).[108]

Nothing can adjoin to a non-projecting category (Adjunct, Specifier or Complement).

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[105] A strong feature has two properties:
- it triggers an overt operation, before Spell-Out
- it induces cyclicity: a strong feature cannot be 'passed' by an element that would satisfy it and later be checked by another element. (Relativized Minimality violation).
A strong feature triggers a rule that eliminates it: [strength] is associated with a part of operations, one that introduces it into the derivation (actually a combination of Select and Merge), a second that (quickly) eliminates it.

[106] A simple operation that takes a pair of syntactic objects (SO_i, SO_j) and replaces them with by a new combined syntactic object SO_u.

[107] LF movement is 'cheaper' than overt movement. The Procrastinate principle requires that, whenever possible, movement is delayed until LF.

[108] + Interpretable features cannot delete and remain visible at LF, whether they are checked or not (phi-features of nouns). This means that only -Interpretable features can be erased. Features of the targets (projecting heads) are always -Interpretable, always deleted and typically erased.

2) The elementary word order and basic clause structure in SC

Chomsky (1995) argues for the following basic clausal structure:
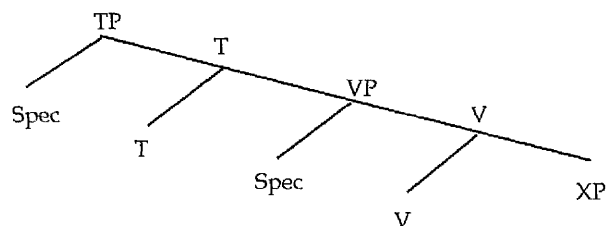
But, if Serbo-Croat does not project Tense, there are two possibilities:
- either no projection exists above VP, or
- some other element is projected to perform the tasks which are in English-type languages performed by Tense.

To examine whether there is a projection above VP, we need to establish the position of the main verb and the subject in order to determine the existence/non-existence of a strong [V] and [N] feature. Consider the following example in the Present Finite:

(230) Marija spava.
     Maria+Nom sleep+3rd+sing
     (Maria sleeps/is sleeping.)

It is not immediately clear whether the MV in the above example is still within the VP, or has raised above it. It is also not quite obvious whether the subject itself is still in the [Spec, VP] or outside the VP. If a typical pre-VP adverb is introduced into the sentence, it becomes clear that the MV has not left its original position.

(231) Marija **stalno** [vp spava].
     Maria+Nom always sleep+3rd+sing
     (Maria sleeps all the time.)

The subject of this clause precedes the preverbal adverb and thus must have moved from the [Spec, VP] to a higher Spec. A higher Spec necessarily means higher projection, though its identity is unknown.

For the time being we shall refer to it as to an $X°$ projection. If the subject raises to [Spec, X], it could be doing so for various reasons:
- to satisfy the EPP (the presence of an NP/DP feature in X),
- to check its phi-features, or
- to have its Nominative Case checked.

Traditionally, specifiers are typically optional, but the EPP states that [Spec, IP], in this case the [Spec, X], is obligatory. It has to be realised either by an overt or an empty category. Chomsky now reduces the EPP to a morphological property of T: the presence of the non-intrinsic [N] feature.

There is no problem with assuming the same for SC. Since Serbo-Croat does not project Tense, it could be the case that the X° Head above is specified for the [NP] feature. Then, the overt subject raising in Serbo-Croat is forced by the strong [NP] feature, as in English, French, etc. Since it is strong, this feature must be non-intrinsic to that Head (different from its category), therefore uninterpretable, hence the need for it to be checked overtly, before Spell-Out.

Chomsky's (1995) claim that the presence of the strong [NP] feature in T° is universally responsible for overt subject raising might be confirmed by Serbo-Croat as well. It would, however, have to be modified. Serbo-Croat denies Chomsky's assumption that this [NP] feature is universally a property of T° and no other Head. If subject raising is forced by the need that this strong [N] feature is checked, then this feature can be a property of at least two Heads: T° or X° (whose identity needs to be established). Also, the fact that, in Serbo-Croat, X° ≠ T shows that there are at least two language types, with respect to the identity of the highest projection. Thus, the EPP would have to be reduced to the presence of the strong [N] feature in the highest projection, whatever it may be. We leave this problem aside for the time being and return to it later.

All that is certain at this stage is that Serbo-Croat subjects always raise to the Spec position of the projection that dominates VP. This position is specified for a strong [N] feature, responsible for the subject raising. As the main verb remains within VP, we conclude that, contrary to French, the X° Head is not specified for a [V] feature.

Chomsky (1995) argues that the only evidence that could be used for postulating Agreement as a projection can be registered when Agr is strong and forces overt raising of categories, which are able to check its strong features. When it is weak, there is no reason nor data to support its existence as a projection.

In other words, if no overt raising of categories marked for Agreement features is evident, it is impossible to prove that Agreement projects. In Serbo-Croat finite forms, the main verb is almost always inflected for Agr (except in the Future Finite, when it is marked for Aspect only). However, it never overtly leaves VP. Therefore, the conclusion must be that the projection above VP is *not* an Agreement projection and that Agreement does not project in Serbo-Croat.

All the simple finite forms behave in the same way. The subject always raises to [Spec, X] and the main verb remains within VP:

```
                        XP
                 /\          X
           Spec /    \     / \        VP      V
                     X    /   \      /  \     /
                        /     / \   /    \   /
                     Adv     /   \ /      \ / \
                          Spec    V        XP
                                  V
```
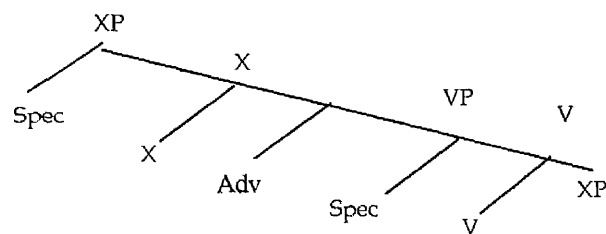
(232)
Present Finite: Marija   stalno   spava
                     Maria–Nom   always   *sleep+3rd+sing*
                     (Maria sleeps all the time.)

(233)
Aorist Finite: Marija   odspava
                     Maria+Nom   *perf+sleep+3rd+sing*
                     (Maria slept.)

(234)
Imperfect Finite: Marija   stalno   spavaše
                     Maria+Nom   always   *sleep+imperf+3rd+sing*
                     (Maria slept all the time.)

(235)
Future II Finite: ...Marija   odspava
                     Maria+Nom   *perf+sleep+3rd+sing*
                     (...(if) Maria sleeps ....)

The compound finite forms contain AUXs as in:

(236) Marija   je   stalno   spavala.
      Maria+Nom   AUX+3rd+sing always   sleep+imperf+3rd+sing

Since the preverbal adverbial follows the AUX in all the compound finite forms, the AUX is placed into the X position:

```
                        XP
                 /\          X
           Spec /    \     / \        VP      V
                     X    /   \      /  \     /
                        /     / \   /    \   /
                     Adv     /   \ /      \ / \
                          Spec    V        XP
                                  V
```
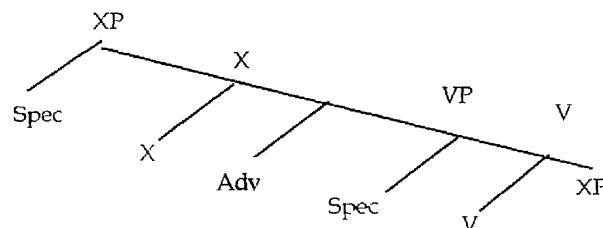
(237)
Pluperfect Finite: Marija **je bila**   stalno   spavala
                     Maria AUX AUX   always   *sleep+fem–sing*
                     (Maria had slept all the time.)

(238)
Past Tense: Marija   **je**   stalno   spavala
                     Maria   AUX   always   *sleep+fem–sing*
                     (Maria slept all the time.)
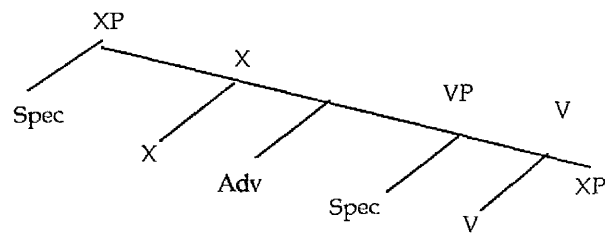
(239)

Future I Finite: Marija   će   stalno   spavati
Maria   AUX   always   sleep+Infinitive
(Maria will sleep all the time.)

(240)

Future II Finite: (ako) Marija   **bude**   stalno   spavala...
(if) Maria   AUX   always   sleep−fem−sing
(If Maria sleeps all the time...)

3) Nominative Case assignment/checking

In Serbo-Croat, the Nominative Case is assigned by Person+Number, which are obligatory in all finite forms. The Economy Principles demand that movement is only a last resort option and, if a requirement can be satisfied without movement, then the requirement MUST be satisfied without movement. Both the GB Theory and the Minimalist Program assume that the Nominative Case is always, and universally, checked above VP by the T Head. Although this claim makes sense in languages in which the Nominative Case is assigned by Tense, it should by no means be taken to be universal, as this assumption is seriously undermined by Serbo-Croat data, as we have seen in Chapter IV, Section 3.

(241)
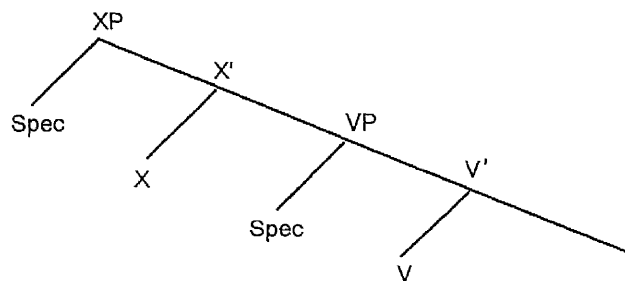
Marija$_j$ je   t$_j$ spavala.
Maria+Nom AUX+3+sg   *sleep+fem+sg*
(Maria was sleeping.)

After the subject has moved to [Spec, X], its Nominative Case is checked by the Person and Number markers on the AUX in X°, through the Spec-Head checking configuration. Now consider the same sentence in a simple finite form (the Present Finite) :

(242)
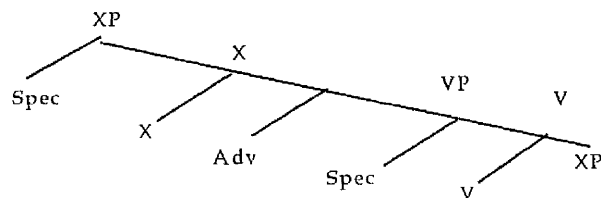
Marija $_j$ stalno   t$_j$ spava
Maria+Nom   *always*   *sleep–3rd+sing*
(Maria sleeps all the time.)

The Person and Number markers are attached to the MV. The position of the preverbal adverbial *stalno* 'always' signals that the main verb does not overtly leave the VP. How does the Nominative Case get checked when the subject and the Person and Number markers do not form a checking configuration with each other?

One cannot propose that the main verb moves to X° covertly, at LF, and then checks the Nominative, as a Case feature is always -Interpretable and, as such, has to be eliminated before LF. But there is nothing to prevent one proposing that, in Serbo-Croat simple finite forms, the subject is assigned the Nominative Case *before* it leaves VP, by the Person and Number Heads attached to MV.

A guiding intuition of the Minimalist Program, says Chomsky (1995), is that operations apply anywhere, without special stipulation, the derivation crashing if a 'wrong choice' is made. I propose that in Serbo-Croat, the Nominative Case is assigned and checked as soon as possible, and anywhere in the structure, providing the assigner and the assignee are in the Spec-Head checking configuration. We established earlier that a Serbo-Croat subject always raises to the highest Spec. At the time, it was not clear whether this was due to the need that its Nominative is checked, or whether it was forced by the presence of the strong [N] feature in X°, or whether this movement was triggered by both reasons. We now see that subject movement to [Spec, X] in simple finite forms has nothing to do with the Case checking requirement, but is forced by the strong [N] in X° (EPP requirement). It is true that, in a large number of researched languages, Nominative Case is checked while subject is in this position, but in those languages, Nominative Case assignment/checking is necessarily linked to a Tense Head which projects.

To summarise, in simple finite forms, the Nominative Case assigner is attached to the main verb, which, during Spell-Out, happens to remain within the VP. Thus, the subject receives its Case while still in the [Spec, VP], before it raises to the [Spec, XP] to satisfy the EPP. The subject's phi-features are checked at the same time, against the [P+N] on the main verb.

(243)

A)			[Nom Case]
			[P+N]
		Marija	spava.
		Maria–Nom	*sleep–3rd–sing*
B)	[NP]		
	Marija$_i$	t$_i$	spava.
	Maria–Nom$_i$	*t$_i$*	*sleep–3rd–sing*
	(Maria sleeps.)		
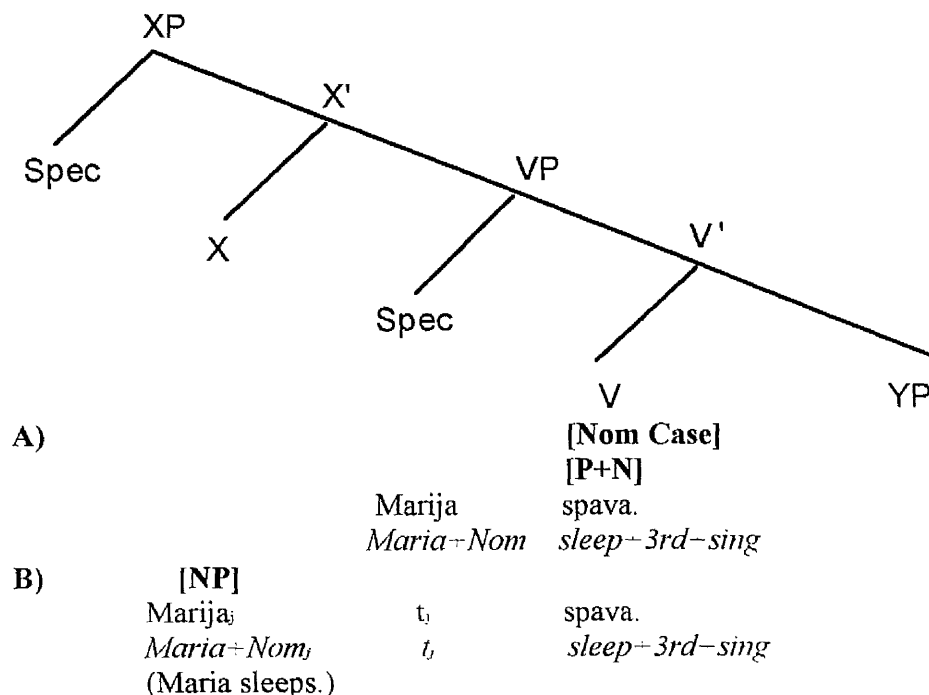
In compound finite forms, the Person and Number morphemes are not attached to the MV, but to the AUX, therefore the subject moves to [Spec, X] for reasons related to both Case and EPP. Here, the subject's phi-features are checked separately: [G+N] are checked within the VP, against the [G+N] morpheme cluster on the main verb. [P+N] are checked at the same time and place as the Nominative Case, after the subject moves into [Spec, XP].

Notice that the Number feature appears twice in the structure: as part of [G+N] in V, and as part of [P+N] in X. As features are to be checked as soon as it is possible, the Number feature of the subject is checked – within the VP, at the same time as its Gender feature. After the subject moves to the [Spec, XP], its Person feature is checked against the Person of the AUX in X. Phi-features on nouns are +Interpretable and need to survive to LF.

Thus, although checked, the Person, Number and Gender features (subject) are not eliminated. The Gender and Number feature cluster of V, as well as the Person and Number feature cluster of AUX, are involved in temporal marking; therefore, they too need to survive at LF and are not erased after they are checked.

(244)

[Nom Case]		**[G+N]**	
[P+N]			
[NP]			
Marija_j	je	t_i	spavala.
Maria+Nom_j	*is+3rd+sing*	*t_j*	*sleep–fem–sing*
(Maria was sleeping.)			
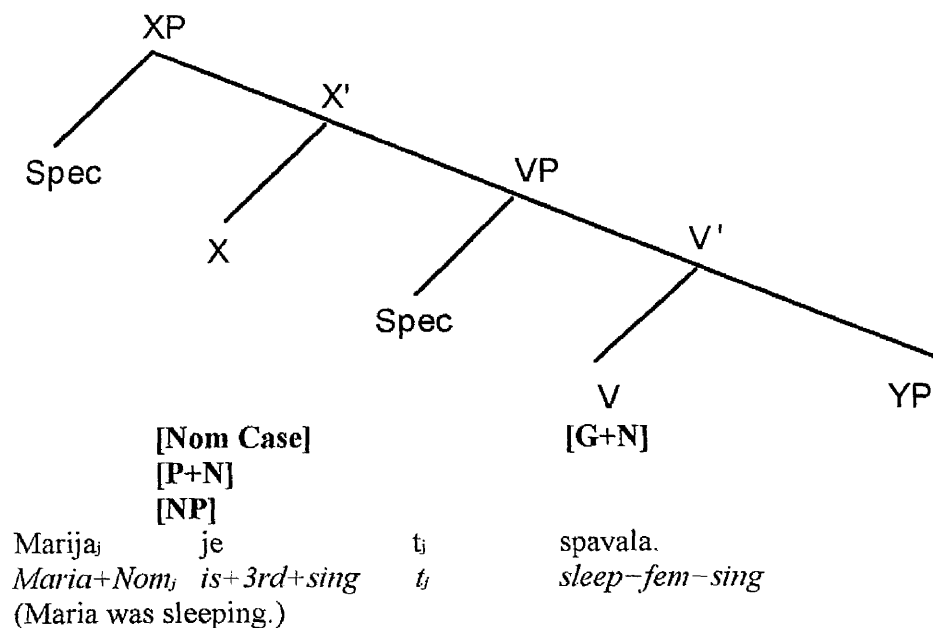
4) The identity of the X projection

4. 1. Abstract features and their morphological realisation

Before we go any further, it is crucial to establish whether tenseless languages have the [Tense] feature at all. Generally, any projection and its intrinsic categorial feature are based on the morphological realisation of the category in question. But, here, we are faced with an unusual puzzle. It is certain by now that Tense in Serbo-Croat is not morphologically marked, overtly nor non-overtly. By logic, non-existing Heads cannot project. As a consequence, we accept that a Tense projection does not exist in Serbo-Croat nor any other tenseless language. But now we have to determine whether it is possible for a feature to suddenly appear at LF, although there is no morphological or syntactic trace of it at any preceding syntactic level. Putting this question in a slightly different way, are the abstract features necessarily morphologically realised? In other words, could it be that, although tenseless languages lack Tense morphology, the [Tense] feature still exists and is checked in these languages? To answer this question, we only need to observe the data again.

First: Serbo-Croat makes up for the lack of Tense markers in the following way:
- its Aspect is restricted and controlled,
- it uses Agreement markers to signal the time of the action in question,
- it developed two sets of Person and Number markers.
The above enables Serbo-Croat to communicate the time of a given action. The initial way of signalling time through the Aspect opposition alone had soon proven to be inadequate and too limited, which is why Agreement and an additional set of Person and Number markers were introduced into play.

Second: In the minds of the native speakers, the time relations are clearly established. It is true that the time of a predicate is often computed on the basis of logical assumptions alone ('... if an action is completed, then the action must be past...'). It is also true that the temporal interpretation of Serbo-Croat predicates depends on a number of factors and not on a single direct marker, as in English. But nevertheless, the end result is the same – at LF, speakers get an idea of the time of the action in both English and Serbo-Croat. It is only that the paths that these two language types have to take in order to reach the same goal are different.

Third: Recall the discussion on Arabic and African languages in Chapter III, Section 5.1. Yoruba, for example, does not have specific Tense markers, but makes temporal distinctions through Aspect markers. Imperfective verbs are interpreted as present, perfective verbs are understood as past. This language has also developed a slightly finer time reference: the imperfective past, signalled through the present form (imperfective verb) and an adverbial that indicates past. If Yoruba did not need to communicate Tense, Aspect would be used freely and there would be no need for the past adverbial in the imperfective past form.

We find a similar situation in Arabic: perfective verbs are interpreted with perfective and past meaning, while imperfectives are interpreted with imperfective and present meaning. Sometimes, imperfective verbs are interpreted as future - on a purely pragmatic basis – the knowledge that, for example, Resurrection Day is a future day, etc. It is irrelevant whether this future interpretation is forced by pragmatic or morphological or syntactic factors. The important fact is – the predicate is marked for future. Isolated, the imperfective verb would be interpreted as present. In other words, native speakers are able to make a time distinction.

The pairing of imperfectives with present and perfectives with past remains a general starting point. Perfective verbs indicate relative past, while imperfective verbs indicate everything else (future and imperfective past) in the presence of an appropriate temporal adverbial.

Clearly, all languages find it necessary to communicate the time of a given action. If a language has developed specific Tense markers, like English, then things are simple. Tenseless languages, on the other hand, find it necessary to develop an alternative Tense marking mechanism and they resort to various tactics:
- they use an Aspect opposition to signal time,
- they use Agreement for the same purpose,
- they 'overdevelop' Agreement morphology,
  (the Primary and Secondary P+N clusters in Serbo-Croat),
- they use verbs with modal meanings,
- they rely on time adverbials.

Obviously, if the link between the abstract features and their morphological realisation was obligatory, time adverbials would not exist, the use of Aspect would not be restricted, Slavic Agreement systems would not be as rich as they are and native speakers of tenseless languages would have no concept of time at all.

The above facts suggest the following:
It is the [Tense] feature and not a Tense projection that exists universally.
This [Tense] feature may or may not be morphologically realised.
If a language happens to have Tense markers, then a Tense Head projects. At LF, Tense markers check the [Tense] feature in the Tense projection.
If a language does not have Tense markers, then a Tense projection does not exist in such a language, but the [Tense] feature is still present at LF where it is checked, not by a Tense Head as in English, but in an alternative way.

4.2. First possibility: Agreement

Only categories with semantic value are allowed to project. Features of the targets (projecting Heads) are always -Interpretable, always deleted and typically erased. The only exceptions are their categorial features. Whatever category they are, their categorial feature will have to survive at LF, as all categorial features are +Interpretable.

Chomsky (1995) considers three functional categories: T, C, D and claims that they have +Interpretable features that provide instructions at either or both interface levels. According to him, Agreement is not a functional category. It consists of -Interpretable formal features only. There is direct evidence from interface relations about T, C and D, but not Agreement. In The Minimalist Program (1995), Chomsky argues for universal assimilation of Agreement to the Tense projection. He claims that the only evidence that can ever be seen for the existence of the Agreement projection is overt raising of certain lexical items, specified for phi-features. When no overt raising is evident, there is no need to assume an Agreement projection. In other words, the Agreement node exists only when it is strong. When it is weak, PF considerations do not give reason for it to be present at all, and LF considerations do not seem relevant. From this point of view, Agreement is nothing more that an indication of a position which has to be filled immediately and overtly.[109]

As far as Serbo-Croat is concerned, a Tense projection is definitely not an option, for the reasons outlined earlier. But, could this mean that Agreement is projected instead?

In Serbo-Croat, Agreement is found on nouns, pronouns, adjectives and verbs. In order to determine its properties, we shall start from those that we can be certain of. Agreement is a *formal* feature. It is either intrinsic (Gender of nouns) or optional in nature (Number of nouns and Gender, Person and Number on verbs). As Agreement on nouns is not relevant for our investigation of Tense interpretation, we concentrate on verbs and treat Agreement as an *optional* feature.

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[109] According to Chomsky (1995), when it is strong, when it projects, Agreement provides a position for Tense or verb raising (by adjunction) and DP raising (by substitution), so there is evidence that it appears in the numeration. Its function is to provide a structural configuration in which the features can be checked: Case and phi-features, and categorial features ([V] and [T] by adjunction, [D] by substitution). Chomsky shows that all the necessary syntactic operations can still be performed and preserved by assimilating the Agreement projection with Tense. This is done by keeping the intrinsic properties of Tense and by assigning it additional non-intrinsic features that were previously thought to be properties of an Agreement node. Case is already a property of Tense and the main verb (hereafter MV) and it makes more sense to assign it to Tense than to Agreement. The T-feature is already intrinsic to Tense. The V-feature and DP/NP-feature are non-intrinsic to both Tense and Agreement, thus it makes no difference which of the two projections they are assigned to. Tense does not require a specifier, but it can be assigned a specifier if an optional strong DP/NP feature is added, which is deleted and erased when checked by DP/NP in [Spec, T].

The situation is only slightly more complicated when it comes to phi-features, if Agr has them, they are -Interpretable. Lexical items are assigned phi-features as they are drawn from the lexicon, and Agreement projection consists only of strong features that force their overt raising. In other words, Agreement can never attract covert raising. But regardless of whether Agreement is, or is not, specified for phi-features, Chomsky argues that Tense is also a lexical item and, as such, it can also be optionally assigned phi-features as it is drawn from the lexicon (as well as nouns, verbs and adjectives). When assigned to nouns, phi-features are +Interpretable, but when optionally added to a predicate as it is selected from the lexicon, they are always -Interpretable, being non-intrinsic and non-categorial to Tense. As such, they would have to be deleted before LF. This means that, whenever present on Tense, phi-features would also always attract overt movement, and we arrive at the same end result. The final conclusion regarding this matter made in The Minimalist Program (1995) is that languages universally project Tense, which is responsible for various syntactic operations, including those previously carried out by the Agreement Head, which is now universally assimilated with Tense.

Agreement is not a substantive (N, V, Adj, Prep,...) but a *functional* category. Functional categories may have strong non-intrinsic categorial features that always force overt raising of a category (with the corresponding categorial feature). Their categorial feature, however, can never be strong.

Chomsky claims that all projecting categories have semantic content and survive until LF. He also argues that of all functional categories, it is only Agreement that has no semantic value. But, as it is clearly involved in Serbo-Croat temporal marking, the importance of Agreement as a semantic factor cannot be disputed.

If one attempted to accommodate all the above facts and still comply with the theory, the following could be suggested: Agreement projects and it has semantic content. Its own intrinsic categorial feature [Agr] must not be strong, but that works well as no overt raising takes place anyway. Although one can get around some of the problems in this way, the crucial requirement in making any claim is still lacking – the evidence! Let us assume that in the absence of Tense, Serbo-Croat projects Agreement instead.

(245)

Marija$_j$	t$_j$	spava.
Maria+Nom$_j$	*t$_j$*	*sleep+3rd+sing*

(Maria is sleeping.)
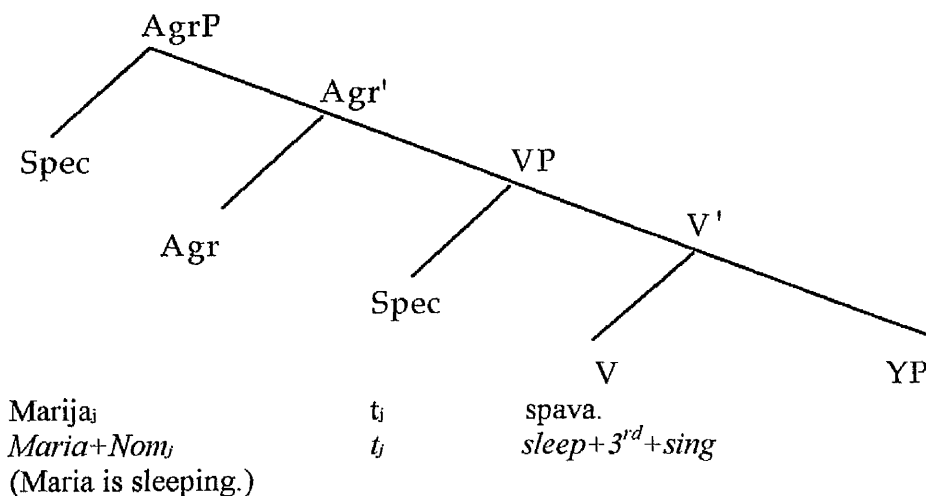
The first problem with this hypothesis is Chomsky's (1995) observation that the only evidence for the existence of an Agr projection would be overt raising of a category with relevant Agreement features. But, as Serbo-Croat main verbs do not move out of VP in any finite form, and as Subject movement is easily accounted for by the presence of the strong non-categorial [N] feature in the projection X (EPP), the conclusion must be that Agreement does *not project*. But, even if the main verbs did overtly raise to X, the problems would remain: overt raising of categories with Agreement features would imply a strong Agreement feature in the Agreement projection. This is forbidden by the theory: the [Agr] feature would be categorial to Agreement, and categorial features cannot be strong.

Because of the lack of evidence, and because Chomsky (1995) gets rid of Agreement in an elegant and plausible way, by reassigning its properties and tasks to Tense, we abandon the idea of an Agreement projection in Serbo-Croat.

4.3. Second possibility: Aspect

I shall start this section with a quick reminder of general facts relating to Serbo-Croat Aspect. Aspect is not concerned with the temporal location of an action, but more with its internal structure. It deals with the opposition between perfectiveness and imperfectiveness. This opposition is merely Aspectual and has nothing to with Tense. In English, both Aspectual values appear in any Tense form. The Present Simple Tense (*I read.*) and the Present Continuous Tense (*I am reading.*) both denote present actions. The difference is one of Aspect. The distinction between a perfective and imperfective action is best seen in an example:

(246) He <u>read</u> the letter while I <u>was watching</u> a film.
      perfective   imperfective

Although seen as two different Tense forms (the Past Simple Tense and the Past Continuous Tense), temporally they are identical. Perfective verbs look at the action as a whole, from the beginning until its end. The reading of the letter started, lasted and finished and all the parts of the action are contained in that one perfective form of the verb. Imperfectives, on the other hand, are not concerned with the beginning or the end of the action in question, but with a slice of it, an internal part of it, however short or long it may be. Perfective verbs also place emphasis on the result of the action they describe, thus connecting the time of the action with some other, consequent time where the consequences of the action can be observed. For example,

(247) I <u>have signed</u> the contract. = perfective (→ The contract is now signed.)

The above predicate contains the entire action, from the beginning to the end. The result of the action is the fact that the contract is now signed. The perfective also links the moment when the contract is signed with the later time during which the contract remains signed or its being signed remains relevant. The fact that the perfective relates two distant points in time is felt very strongly in English, which may have something to do with the fact that English perfect does not tolerate any specific time reference within the same sentence (**I have signed the contract yesterday.*). Imperfectives are different:

(248) *I was signing it yesterday.* = imperfective (→ It may or may not be signed.)

This predicate refers only to a part of the process of signing. It does not even imply that the action was completed, and certainly not that the contract is signed in the end. It concentrates on a portion of the action and a specific point in time. It can appear with time adverbials.

The above is just a very simple way of distinguishing between the two Aspects and it does not, in any way, exhaust the differences which may be slightly more complex than the above may suggest.

Slavonic verbs are inherently either perfective or imperfective: *pričati* 'to talk' (imperfective), *skočiti* 'to jump' (perfective). A verb can also be bi-Aspectual: both perfective and imperfective at the same time: *vidjeti* 'to see' (bi-Aspectual). Slavic languages have a large inventory of verbal prefixes.

Primarily, these prefixes affect the meaning of the verb, but almost always they also make an imperfective verb perfective: *pisati* 'to write' (imperfective) vs. *potpisati* 'to sign' (perfective). If added to a perfective verb, it usually stays perfective: *skočiti* 'to jump' (perfective) vs. *uskočiti* 'to jump in' (perfective).

Rarely, prefixes may just affect the meaning and not the Aspect of the verb: *gledati* 'to watch' (imperfective) and *nadgledati* 'to supervise' (imperfective). Also rare is the situation where a prefix leaves the meaning of the verb unaffected, but changes its Aspectual properties: *trčati* 'to run' (imperfective) and *potrčati* 'to start running' (perfective). To make any of the prefixed perfective verbs imperfective, it is usually enough to drop the prefix. But by doing this, we not only lose the perfective Aspect, but also the new meaning that this prefix carries. In order to preserve the semantic difference that the prefix brings and still transform the perfective verb into an imperfective, an imperfective morpheme is added: *pisati* 'to write' (imperfective), as illustrated in the Table 5.1. below.

Table 5.1. Aspect inflection

Perfective prefix	Imperfective infix
potpisati 'to sign'	*potpisivati* 'to be signing'
prepisati 'to copy'	*prepisivati* 'to be copying'
ispisati 'to fill' (a notebook)	*ispisivati* 'to be filling' (a notebook)
raspisati 'to distribute leaflets'	*raspisivati* 'to be distributing leaflets'
otpisati 'to write off'	*otpisivati* 'to be writing off'
pripisati 'to add' (in writing)...	*pripisivati* 'to be adding' (in writing)
zapisati 'to write down'	*zapisivati* 'to be writing down'

As we insist that the [T] feature exists universally, we must assume that the projection X has the [T] feature, which survives until LF. But, as Serbo-Croat is a tenseless language, a Tense projection does not exist. As the X projection is not the Tense projection, [T] is a non-intrinsic categorial feature to it and, as such, it must be eliminated *before* LF. If the [T] feature is not present at LF, then Tense cannot be checked at LF. The key to this problem is in the very nature of Serbo-Croat Tense forms and the information that they communicate.

Recall that the most primitive finite system of Proto-Indo-European, the ancestor of the entire Indo-European language group, consisted of only past and non-past. Past was signalled through perfective verbs and non-past through imperfectives. In other words, Aspect was all that was available:

Perfective/completed action by logic was considered completed and *therefore* past. Imperfective/non-completed action was, by logic, still going on and *therefore* interpreted as non-past (including both present and future). Actions were placed into time through interpretation of Aspect (completed vs. non-completed). It is then reasonable to assume that Proto-Indo-European projected Aspect and that it was the [Aspect] feature that got checked at LF.

Serbo-Croat finite forms are more concerned with *properties* of actions, than with placing those actions in time. Time is deduced logically, from the attributes of actions. This explains why any Serbo-Croat finite form can have any temporal association. All that predicates are able to convey are action characteristics, and no absolute Tense is contained in any finite form. If all actions are viewed relative to the moment of speech and not absolute Tense, then, moving the time of the moment of speech automatically gives the same finite form many temporally different interpretations.

So, let us propose, for the time being, that Serbo-Croat projects Aspect whose intrinsic categorial feature is [Aspect]. Being intrinsic and categorial to Aspect projection, the [Aspect] feature *must* survive at LF, when it gets checked. Aspect does have semantic content and, as such, it would be allowed to project. If this is correct, then this is what the earliest Proto-Indo-European clause structure must have been like:

(249)
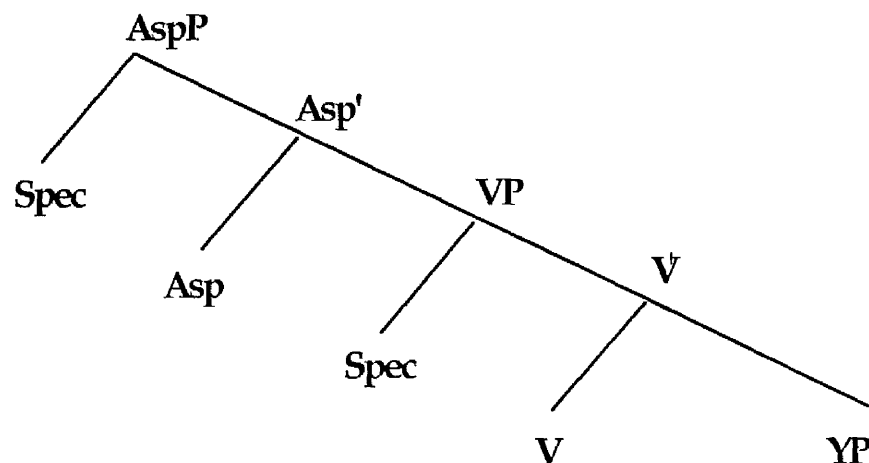
Spell-Out:
subjⱼ   tⱼ   Aspect (MV)

LF:
Subjⱼ   Aspect (MV)ᵢ   tⱼ   tᵢ

The main verb, specified for Aspect, moves covertly to Asp at LF where it checks the [Asp] feature. If the main verb was perfective, it was understood as past at LF; if it was imperfective, it was interpreted as non-past.

This early way of signalling temporal properties of actions was, obviously, extremely limited. Non-past included both present and future in a way that future was, in fact, only described through few chosen modal verbs in the Present Finite form (i.e. saying *I want to go...* to mean *I will go...*). The Proto-Indo-European languages divided into English type languages (which developed independent Tense markers) and Serbo-Croat type languages (in which temporal marking is achieved through interaction of Aspect and Agreement).

Serbo-Croat allowed perfectives into non-past and imperfectives into past. Perfective non-past was interpreted as future and imperfective past signalled non-completeness of a past action. The new difference between perfective and imperfective past and perfective and imperfective non-past was indicated through the Primary and Secondary Person and Number markers. Please refer to Chapter VII for more details.

Proto Slavonic developed its own Perfect and Pluperfect, formed analytically from the l-participle and, respectively, the Present or the Aorist of the verb 'to be' as an AUX verb. Eventually, we arrive at the modern Serbo-Croat system of finite forms.[110]

Table 5.2 Serbo-Croat system of finite forms

Simple forms:	Present		MV: Imperfective+(P1+N)
	Imperfect		MV: Imperfective+(P2+N)
	Future II		MV: Perfective+(P1+N)
	Aorist		MV: Perfective+(P2+N)
Compound forms:	Past/Perfect	AUX: Imperfective+(P1+N)	MV: (G+N)
	Pluperfect	AUX: Imperfective+(P2+N)	MV: (G+N)
	Present Conditional (Future II)	AUX: Perfective+(P1+N)	MV: (G+N)
	Past Conditional	AUX: Perfective+(P2+N)+(G+N)	MV: (G+N)

In the simple forms, the Aspect of the main verb (together with its Person and Number properties) directly affects the temporal interpretation of the predicate. In other words, the Aspect of the main verb of the simple forms is strictly determined and never optional. In the complex forms, the obligatory Aspect requirement is transferred onto the AUX verbs, so that the main verbs can have either Aspect value.

A Tense morpheme does not exist in Serbo-Croat type languages, which is why a greater manipulation of the forms is possible (in the sense that any finite form can often be given any temporal interpretation).

In any case, the [Tense] feature seem to be checked in both English and Serbo-Croat language types, but in different ways. If the [T] feature is checked at LF, than it cannot be Aspect that projects.
The Proto-Indo-European story now has to be changed. It is not that Aspect projected nor that the [Aspect] feature was checked at LF. It is that whatever did project had the

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[110] Table 4.12., page 89, repeated here.

[Tense] feature, which was *checked by Aspect* at LF. We are back to the same problem that we avoided at the beginning of this section: if there is no Tense Head in Serbo-Croat, then Serbo-Croat cannot project Tense. If Tense does not project, then the mysterious X projection cannot be Tense. If the X projection is not Tense, then the X projection cannot keep its [Tense] feature until LF, since this feature must be a non-intrinsic categorial feature of the X projection.

4.4. Third possibility: back to INFL

To summarise, both English and Serbo-Croat type languages developed from the same common ancestor: Proto-Indo-European. The entire family is able to communicate Time,
- Proto-Indo-European did it exclusively through Aspectual properties of actions,
- some languages signal precise and absolute Time, like English, with independent Tense markers,
- some languages do it 'loosely', viewing actions relative to the moment of speech, like Serbo-Croat and similar languages that lack Tense morphology.

If temporal marking can be performed in all the three above cases, then we are safe to say that the [Tense] feature is always checked at LF, although languages vary in the ways that [T] checking is dealt with. To accommodate all the above ways of temporal marking, the following requirements arise:
The X projection must universally be specified for [Tense].
The [T] feature must survive until LF, where it gets checked.
In order for [T] to survive until LF, it must be the intrinsic categorial feature of the X projection.
If [T] is an intrinsic categorial feature of the X projection, then the X projection must be Tense.
But the X projection cannot be the Tense projection in the Serbo-Croat type of languages, as these languages lack Tense.

The above contradicting conditions can be easily handled by going back to the pre-Split Infl Hypothesis (Pollock, 1989) and arguing the following:

Languages universally project Infl.
The Infl projection is specified for [T].
The [T] feature of Infl survives until LF , where it gets checked.
The [T] feature is the intrinsic categorial feature of Infl and as such it survives at LF.
The [T] feature of the Infl projection can be checked at LF in different ways in different languages.

5) Individual contribution of the factors involved in temporal marking

Factors that affect Serbo-Croat temporal marking are:
Aspect: perfective or
        imperfective
Person and Number: Primary or
                Secondary
Gender and Number cluster

5.1 Aspect

We start with Aspect. In earlier language, Aspect was crucial in temporal computation: perfectiveness meant past, imperfectiveness meant non-past. Today, as Aspect interacts with Agreement, its role has changed. Both Aspect values now appear in past, future or present related forms.

In simple finite forms, Aspect still determines whether actions are completed (perfective value) or non-completed (imperfective value). Aspect decides which finite forms a verb is allowed to take and which finite forms it can never appear in. Thus, imperfective verbs are only allowed into the Present Finite form and the Imperfect Finite form and never into the Future II or the Aorist Finite. Perfective verbs, on the other hand can only do the opposite.

Complex finite forms allow more freedom. Verbs with any Aspect value are allowed into any complex finite form, as long as the Aspect of the AUX verb is fixed. Thus, the Aspect of the main verb does not contribute anything to the temporal marking in complex finite forms, although it certainly does in simple ones. But, what does the Aspect of the main verb contribute in complex finite forms?

Table 5.3. Aspect distribution in complex finite forms:

Compound forms:	AUX	MV
Past/Perfect	Imperfective+(P1+N)	Perfective+(G+N)
	Imperfective+(P1+N)	Imperfective+(G+N)
Pluperfect	Imperfective+(P2+N)	Perfective+(G+N)
	Imperfective+(P2+N)	Imperfective+(G+N)
Present Conditional (Future II)	Perfective+(P1+N)	Perfective+(G+N)
	Perfective+(P1+N)	Imperfective+(G+N)
Past Conditional	Perfective+(P2+N)	Perfective+(G+N)
	Perfective+(P2+N)+(G+N)	Imperfective+(G+N)

The Perfect Finite form denotes any past action with present consequences. Temporal marking is done by the AUX. The Aspect of the main verb specifies not the Time, which is already decided by the AUX, but whether the action is completed or not:

(250a) Marija je kupovala...   (Maria was buying...)   **(imperfective)**
(250b) Marija je kupila...   (Maria bought...)   **(perfective)**

The Pluperfect Finite form denotes a past action that preceded another past action. Again, the Time reference is already established by the AUX. The Aspect of the main verb only determines completeness or non-completeness of the action:

(251a) Marija bijaše kupovala... (Maria had been buying...)   **(imperfective)**
(251b) Marija bijaše kupila...   (Maria had bought...)   **(perfective)**

The Present Conditional Finite form denotes a future possibility. Again, the Aspect of the main verb gives us the Aspectual properties of actions:

(252a) Ako Marija bude kupovala... (If Maria goes buying...) **(imperfective)**
(252b) Ako Marija bude kupila...   (If Maria buys...)   **(perfective)**

The Past Conditional Finite form denotes an unfulfilled present possibility. The Aspect of the main verb has the same role as in the above three cases:

(253a) Da ..., Marija bi kupovala... (If..., Maria would be buying...) **(imperfective)**
(253b) Da ..., Marija bi kupila...   (If..., Maria would buy...)   **(perfective)**

Thus, in complex finite forms, main verbs check the [Aspect] feature at LF, and have nothing to do with [Tense] checking. It is the Aspect value of AUX verbs that is responsible for temporal marking. Simple finite forms do not have AUXs. The Aspect of the main verb checks both Aspect and, together with Agreement, the [Tense] feature.

The Infl node must, then, be specified for the [Aspect] feature.
The [Aspect] feature must have semantic content as it survives until LF.
The [Aspect] feature must be an intrinsic categorial feature of the Infl projection in order to avoid being eliminated before it reaches LF.
Accepting that the Infl node has a special status, we assume that, so far, both [Tense] and [Aspect] count as intrinsic categorial features of the Infl projection.

5.2. Primary and Secondary Person and Number markers

Compare the following forms:
the Present and the Imperfect.
the Present Conditional (Future II) and the Aorist.
the Perfect and the Pluperfect.
the Present Conditional and the Past Conditional.

Table 5.4 Serbo-Croat system of finite forms[111]

Simple forms:	Present		MV: Imperfective+(P1+N)
	Imperfect		MV: Imperfective+(P2+N)
	Future II		MV: Perfective+(P1+N)
	Aorist		MV: Perfective+(P2+N)
Compound forms:	Past/Perfect	AUX: Imperfective+(P1+N)	MV: (G+N)
	Pluperfect	AUX: Imperfective+(P2+N)	MV: (G+N)
	Present Conditional (Future II)	AUX: Perfective+(P1+N)	MV: (G+N)
	Past Conditional	AUX: Perfective+(P2+N)+(G+N)	MV: (G+N)

Structurally, the only difference between the Present and the Imperfect Finite is the fact that the Present contains the Primary set of the Person and Number markers, while the Imperfect involves the Secondary set. Semantically, the Present Finite form denotes continuous present action, while the Imperfect Finite form denotes a continuous past action. On this example, it seems that the Secondary set of Person and Number markers 'pushes' the action further into the past.

Investigating the same syntactic contrast between the Present Conditional (Future II) and the Aorist Finite, yields a similar result. The Aorist, with its Secondary set of Person and Number markers is past when compared with the Present Conditional Finite, which denotes a future possibility. Comparison of the Perfect and the Pluperfect and of the Present and the Past Conditional gives the same outcome: Everything else being the same, a finite form containing the Secondary set of Person and Number markers will be interpreted as 'more past' than the same finite form containing the Primary set instead.

5.3. Gender and Number markers

Now we investigate the role of the Gender and Number feature cluster in temporal interpretation. Compare the Present Finite and the Past/Perfect Finite forms:

	AUX	MV
Present		Imperfective+(P1+N)
Past/Perfect	Imperfective+(P1+N)	(G+N)

The only difference (apart from the simple vs. complex form) is the presence of the Gender and Number cluster in the Perfect Finite. The Present Finite form denotes an action that is simultaneous with the moment of speech. The Perfect Finite form denotes an action that happened before the moment of speech, but whose consequence can be felt/seen/noticed now. In other words, the Present Finite form refers to *now*, while the Perfect Finite form refers to *before* and *now*. Could this mean that the presence of the Gender and Number cluster links the predicate with past?

---

[111] Table 4.12., page 89, repeated once more.

	AUX	MV
Imperfect		Imperfective+(P2+N)
Pluperfect	Imperfective+(P2+N)	(G+N)

Structurally, the only difference is in the Gender and Number cluster. Semantically, the Imperfect is associated with a continuous past action and the Pluperfect with a past action that happened *before* another past action (before the Imperfect action itself). Once more, if a form is marked for Gender and Number, it is 'pushed' further back in time.

	AUX	MV
a) Present Conditional (Future II)	------	Perfective+(P1+N)
b) Present Conditional (Future II)	Perfective+(P1+N)	Imperfective+(G+N)
c) Present Conditional (Future II)	Perfective+(P1+N)	Perfective+(G+N)

Here, we have a different story. The Future II, we know, is used for open conditional clauses only. The main characteristic of these clauses is that they always contain two future actions and one is always dependent on the other: if a certain condition is fulfilled, then something will happen. This condition is always expressed through the Present Conditional (Future II), a future action that *precedes* another future action (*Moja sestra će ići napolje, ako bude lijepo vrijeme.* 'My sister will go out, if the weather is nice.')

Perfectiveness, originally associated with past, signals that the action in question, although future in relation to the moment of speech, is really past in relation to another future action that follows it. Imperfective verbs were originally not allowed into the Future II. To make it possible for imperfective verbs to form the Future II, a perfective AUX was introduced. Later, perfective verbs appeared in the compound form as well, by analogy with imperfective ones.

And finally:	AUX	MV
Aorist	------	Perfective+(P2+N)
Past Conditional	Perfective+(P2+N)+(G+N)	(G+N)

The Aorist signals a completed past action.
(254) Djeca odoše u školu.
> *(The children have gone to school.)*

The Present Conditional denotes an unfulfilled past possibility:
(255) Moja sestra bi bila išla napolje da je bilo lijepo vrijeme.
> *(My sister would have gone out if the weather had been nice.)*

With the exception of the Conditionals (Present and Past), Gender and Number seem to have the ability to 'move' the time of the action further back into the past. But, as the Conditionals are not typical finite forms, one may be justified in ignoring them. Further evidence that Gender and Number really contribute past interpretation to a form is found in three-element finite forms. Serbo-Croat allows double AUX verbs.

In constructions of this kind, the first AUX is specified for Person and Number, while the second AUX is specified for Gender and Number, and so is the main verb.

Table 5.5 Three element compound finite forms:

	AUX 1	AUX 2	MV
Past/Perfect	Imperfective+(P1+N)	(G+N)	(G+N)
Pluperfect	Imperfective + (P2+N)	(G+N)	(G+N)
Present Conditional (Future II)	Perfective+ (P1+N)	(G+N)	(G+N)
Past Conditional	Perfective+ (P2+N)	(G+N)	(G+N)

The second AUX is composed of the Infinitive stem (with no Aspect) of the verb 'to be', and the G+N cluster. If the second AUX is introduced and the G+N cluster is doubled, each finite form becomes 'more past' than it was, apart from in the Present Conditional, where it makes no difference.

The Past/Perfect
(256a) Marija je spavala.   (Maria was sleeping.)
(256b) Marija je **bila** spavala   (Maria had been sleeping.)

The Pluperfect
(257a) Marija bijaše spavala.   (Maria had been sleeping.)
(257b) Marija bijaše **bila** spavala (*Maria had had been sleeping.) No English equivalent.

The Future II
(258a) Ako budem išla napolje, kupiću novine.   (If I go out, I'll buy the newspaper.)
(258b) Ako budem **bila** išla napolje, kupiću novine.   (If I go out, I'll buy the newspaper)

The Past Conditional
(259a) Da idem napolje, ja bih kupila novine.   (If I went out, I would buy the paper.)
(259b) Da sam išla napolje, ja bih **bila** kupila novine. (If I had gone out, I would have...)

Although they only act when together, compositionally, Aspect and Agreement each have a specific role to play in temporal marking. The ancient link between perfectiveness and past and imperfectiveness and non-past is evident only in simple (older) finite forms. In complex forms, this link has long been lost: main verbs of any Aspect value are allowed into any complex finite form, but the Aspect of AUX verbs must be fixed. The Aspect of the main verb checks the [Aspect] feature in complex forms, and both the [Aspect] and the [Tense] feature in simple forms. The Aspect of the AUX verbs is only involved in [Tense] feature checking. The Primary set of Person and Number markers still seems to move the action towards non-past, while the Secondary set pushes the action towards past. Gender and Number also contribute a past interpretation to a form. Regardless of these individual roles that they seem to play, the above factors act only as a set of features.

6) Clausal structure and compositional feature checking

6.1. Serbo-Croat and related languages

Regarding Serbo-Croat features and feature checking, so far, it has been established that:

Serbo-Croat does not project Tense, Agreement or Aspect.
Aspect and Agreement are involved in temporal marking.
Agreement morphemes act in sets: P+N, G+N, or P+G+N.
There are two sets of P+N markers (Primary and Secondary).
The Nominative Case is assigned/checked by the P+N Agreement cluster.
The Nominative Case is checked anywhere in the structure, as soon as the necessary conditions are met – when subject is in either [Spec, VP] or [Spec, I].
Serbo-Croat projects an Infl node, which is specified for:
- a non-intrinsic categorial feature [N] that overtly raises the subject of the clause from [Spec, VP] to the [Spec, I] (EPP);
- intrinsic categorial features [T] and [Asp] that both have semantic content and both survive until LF where they get checked;
The Aspect marker of the main verb checks the [Aspect] feature.
Each temporal interpretation is given by a different set of Aspect and Agreement features.

6.1.1. Simple finite forms:

(260)


```
                    IP
                   /  \
                  /    \____ I'
                 /     /  _____ VP
              Spec    /    \           /  \
                     /      \         /    \____ V'
                    I       Spec     /     /  _____
                                    /     /    \           \
                                   /     V                  YP
                                  /
                              [Asp]
                              [T]
                              [N]
```
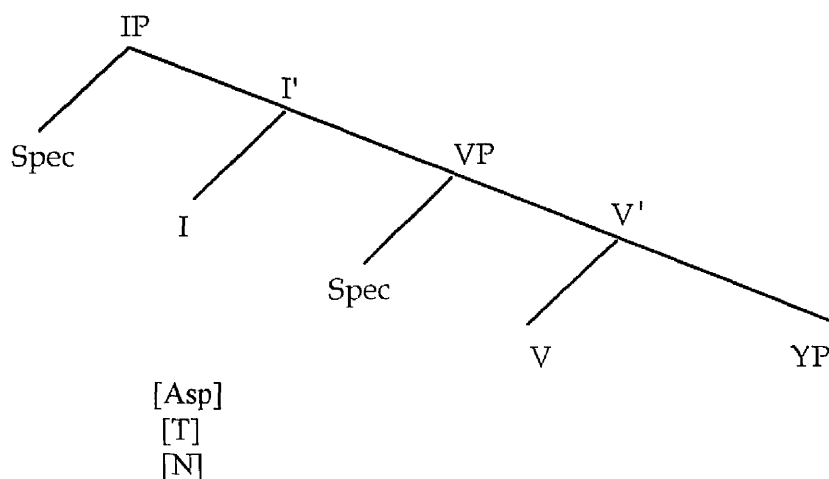
Spell-Out
Stage 1:

Marija	spava	(*Maria sleeps*)
Maria–Nom	*sleep–3rd–sing*	
Subj+**Nom**	Imperf+**P1+N**	

Nominative Case is checked by the Person and Number markers on the main verb, while the subject is still within the VP.

(261)
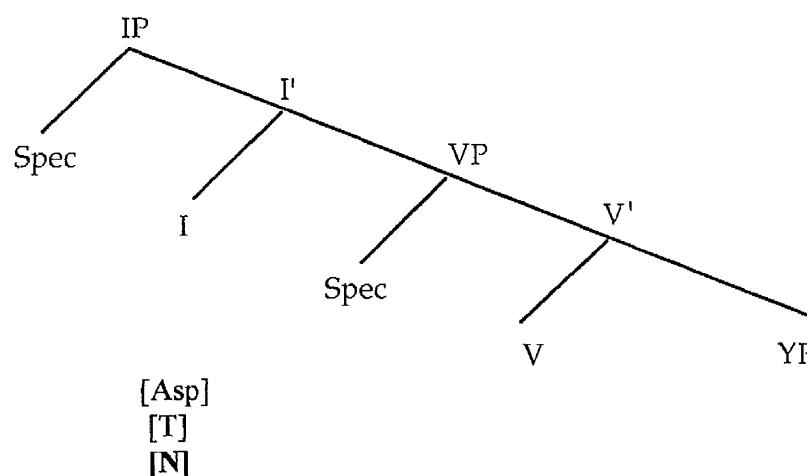
Spell-Out

<u>Stage 2</u>:

Marija$_i$		t$_j$	spava *(Maria sleeps)*
Maria$_j$		*t$_j$*	*sleep+3rd+sing*
Subj$_j$		t$_j$	Imperf+P1+N

As the [N] feature is a non-intrinsic categorial feature in Infl, it has to be checked by an appropriate category (subject) and eliminated before LF. This requirement forces overt subject raising to [Spec, I].

(262)
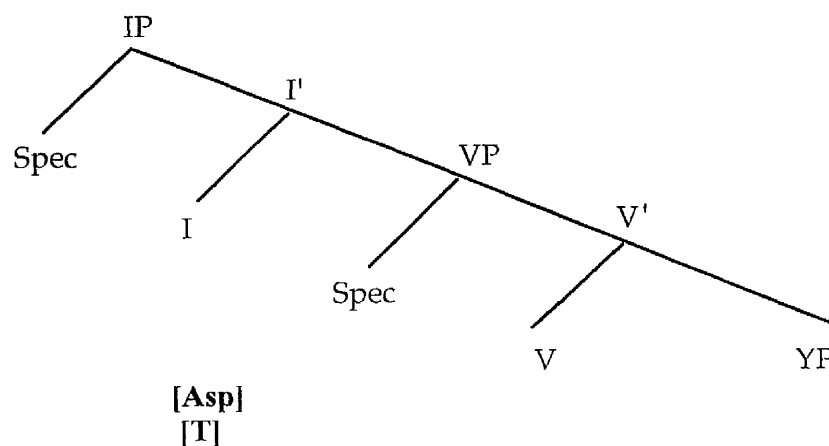
LF

<u>Stage 1</u>:

Marija$_i$	spava$_i$	t$_j$	t$_i$	*(Maria sleeps)*
Maria$_j$	*sleep–3rd–sing*	*t$_j$*	*t$_i$*	
Subj$_j$	**Imperf+P1+N**	t$_j$	t$_i$	

Features that remain in Infl at LF are [T] and [Asp]. We have seen in many examples that Serbo-Croat needs more than just one feature to ensure temporal marking. It requires an entire set. In this example, to interpret this predicate as a Present Finite predicate, both imperfective Aspect and the Primary set of Person and Number markers are needed. The main verb moves covertly to Infl, with the entire set of its features. The member features of this set check the [T] feature in Infl, together, compositionally.

Features have tasks that they perform individually, independently of the rest of the features of the set that they belong to. They also have tasks that they perform with the rest of the member features, as a part of the same set.

Thus, the P1+N cluster acts independently when it checks the Nominative Case at Spell-Out. Similarly, at LF, the imperfective marker of the main verb checks the [Asp] feature in Infl. But, both the P1+N cluster and the Aspect of the main verb then act as a team, when they check the [T] feature at LF. The Nominative Case at Spell-Out and the [T] feature at LF are checked compositionally, by feature pairs/sets: P1+N and Imperf+P1+N, respectively.

6.1.2. Compound Finite Forms:

(263)

[Asp]
[T]
[N]
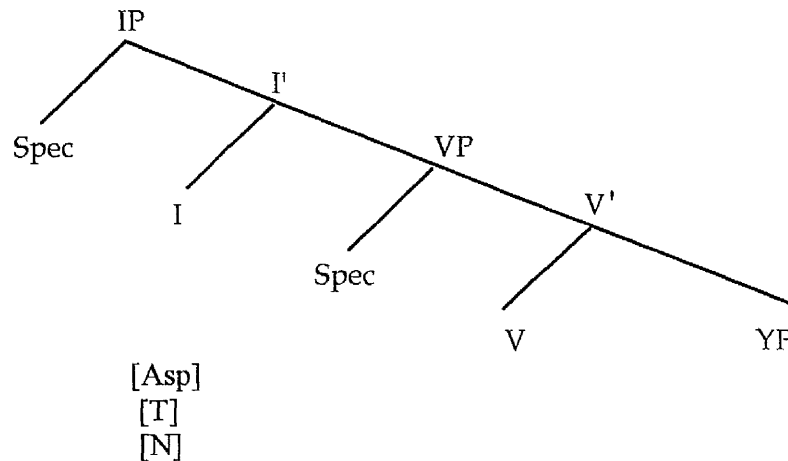
Spell-Out

Stage 1:

	je	Marija	spavala	(Maria slept)
	Be−P1−N	Maria+Nom	sleep+fem+sing	
	Imperf+P1+N	Subj+**Nom**	Imperf+G+N	

The Nominative Case should be checked by Person and Number. Obviously, this cannot be done while the subject is still within the VP, since the main verb of compound finite forms is not specified for Person and Number. Thus, subject raising in compound finite forms is associated with both the Nominative Case and the [N] feature checking (EPP):

(264)

```
              IP
            /    \
         Spec     I'
               /    \
              I       VP
                    /    \
                 Spec     V'
                        /    \
                       V      YP
```

           [Asp]
           [T]
           [N]
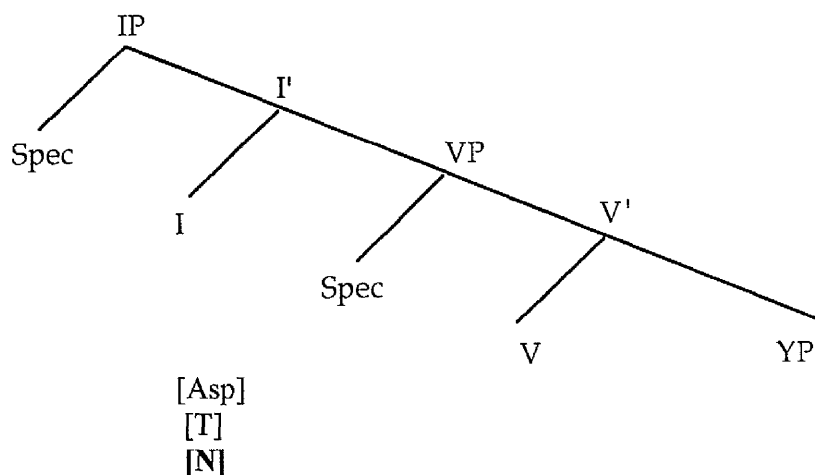
Spell-Out

Stage 2: Marija$_i$ je   t$_i$ spavala   (*Maria sleeps*)
          Maria$_i$+Nom   *Be+P1+N*   *t$_i$*   *sleep+fem+sing*
          Subj$_i$ +Nom Imperf+**P1+N** t$_i$ Imperf+G+N

The Subject raises to [Spec, I] where its Nominative Case is checked against the P1+N markers on the AUX. The Subject also checks and eliminates the non-intrinsic categorial feature of the Infl – [N].

(265)

```
              IP
            /    \
         Spec     I'
               /    \
              I       VP
                    /    \
                 Spec     V'
                        /    \
                       V      YP
```

           [Asp]
           [T]
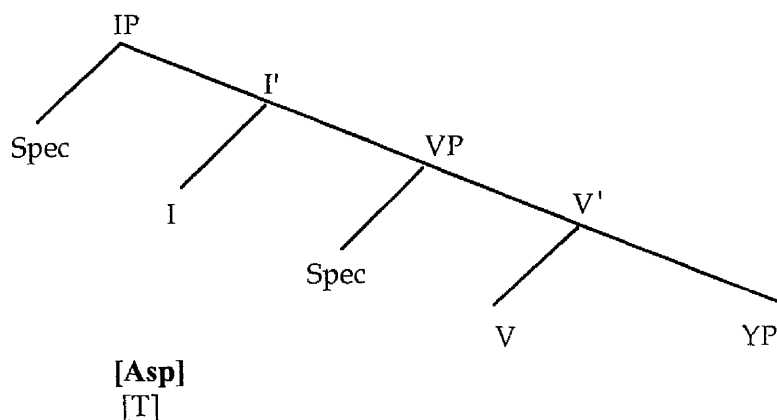
LF

Stage 1: Marija$_i$ je spavala$_i$ t$_i$ t$_i$ (*Maria sleeps*)
          M.$_i$ *be+P1+N, sleep+fem+sing*   *t$_i$*   *t$_i$*
          Subj$_i$ Imperf+P1+N **Imperf+G+N** t   t$_i$

Features that remain in Infl at LF are [T] and [Asp]. The main verb raises covertly to Infl. Its Aspect independently checks the [Asp] feature in Infl.

(266)

LF:

<u>Stage 2</u>: Marija_j   je spavala_i   t_j   t_i   (*Maria sleeps*)
        M_j   be+P1+N, sleep+fem+sing t_j   t_i
        Subj_j **Imperf+P1+N** Imperf+G+N t_j   t_i

The [T] feature is checked compositionally by the entire set, which in this case includes: the imperfective Aspect, the Primary set of Person and Number markers, and the Gender and Number feature pair.

Probably the best way to describe my understanding of how the features are organised and how they act in Serbo-Croat would be by making an analogy or comparison with molecular structure in chemistry. Imagine that all features are like atoms. Chemical processes combine atoms into molecules, in our case feature sets. Molecules are the smallest particles of a substance that exhibit the properties of that substance. Molecules consist of two or more atoms held together by chemical bonds. For example, water molecules consist of two atoms of hydrogen and one atom of oxygen (H_2O).

Take, for example, the Perfect Finite and look at it as a semantic substance that a speaker wants to communicate. The speaker uses features (atoms), they combine into feature sets (molecules) – just as water can be created by combining 2 atoms of hydrogen and 1 of oxygen. Feature sets ('molecules') are the smallest particles of a substance (say, a specific finite form) that exhibit the properties of that substance. Thus, once we have the following set:

>   Imperfective Aspect
>   Person 1
>   Number
>   Gender
>   Number,

we have created a semantic substance: the Perfect Finite, whose chemical formula, by analogy, might be taken to be:

>   Imperfective Person Number2 Gender   (Impfv P1 N2 G)

Continuing in the same direction, the formulas, or 'recipes' for creating each Serbo-Croat finite form are repeated below. The necessary 'ingredients' are given in bold.

Table 5.6. Composition of Serbo-Croat finite forms

The Present Finite form

The group 'A' verbs (please see 2.2.)

```
MV    Aspect  =  impfv
AUX   Aspect  =
P + N         =  P1 + N
G + N         =
```

The group 'C' verbs (please see 2.2.)

```
MV    Aspect  =  perf + impfv
AUX   Aspect  =
P + N         =  P1 + N
G + N         =
```

The Aorist Finite form

```
MV    Aspect  =  pfv
AUX   Aspect  =
P + N         =  P2 + N
G + N         =
```

The Imperfect Finite form

```
MV    Aspect  =  impfv
AUX   Aspect  =
P + N         =  P2 + N
G + N         =
```

The Pluperfect Finite form

```
MV    Aspect  =   any
AUX   Aspect  =   impfv
P + N         =   P2 + N
G + N         =   (G + N) x 2
```

The Past Perfect Finite form

```
MV    Aspect  =   any
AUX   Aspect  =   impfv
P + N         =   P1 + N
G + N         =   G + N
```

The Future I Finite form

```
MV    Aspect  =   any
AUX   Aspect  =   impfv
P + N         =   P1 + N
G + N         =
```

The Future II Finite form

```
MV    Aspect  =   any
AUX   Aspect  =   pfv
P + N         =   P1 + N
G + N         =   G + N
```

The Present Conditional Finite form

```
MV    Aspect  =   any
AUX   Aspect  =   pfv
P + N         =   P2 + N
G + N         =   G + N
```

The Past Conditional Finite form

```
MV    Aspect   =   any
AUX   Aspect   =   impfv
P + N            =   P2 + N
G + N            =   (G + N) x 2
```

I have been reluctant to call the Future I an independent finite form as it has the same feature composition as the Present Finite form. If the Future I was an independent finite form, it would be the only one that uses the verb *htjeti* 'to want' as its AUX. And thirdly, this would be the only compound finite form whose main verb is not marked for G+N, but appears in Infinitive:

(267) Marija   će   **spavati.**
   Maria   want+imperf+3rd+sing   sleep-inf
   (Maria will sleep.)

No Slavic language has yet developed an independent Future Finite form. The ordinary Future is still communicated in a similar way to the way that it was communicated in Proto-Indo-European: through the modalities of the Present Finite. What some wrongly call the Future Finite form is nothing more than the modal verb *htjeti* 'to want' in the Present Finite Form, with an Infinitival complement.

(268) Marija   hoće   [PRO   spavati].
   Maria   want+imperf+3rd+sing [PRO   sleep-inf]
   (Maria wants [PRO to sleep].)

There are, however, certain facts that suggest that Serbo-Croat might be in the process of inventing an independent Future Finite form: the verb *htjeti* 'to want' must appear in its clitic form. Although this does not change much syntactically, it gives a signal that the sentence communicates Future. By contrast, if the verb *htjeti* 'to want' appears in its full form, the sentence is taken to communicate Present:

(269) Marija   hoće   [PRO   spavati].
   Maria   want+imperf+3rd+sing [PRO   sleep-inf]
   (Maria wants [PRO to sleep].)

(270) Marija   će   [PRO   spavati].
   Maria   want+imperf+3rd-sing [PRO   sleep-inf]
   (Maria will [PRO to sleep].)

It could be that, in reducing the verb to its clitic form, one reduces its stem and, consequently its semantics. The semantics of the verb being removed, one concentrates on its inflection alone and treats the verb rather like an AUX and searches for the main verb in order to compute the semantics of the predicate.

6.2. English-type languages

The proposal that it is, in fact, the Infl that projects rather than Tense, works better for English type languages as well.

English, like any other language, does have an Aspect distinction. As English also has Tense morphology, Aspect is not involved in Tense marking. As English Aspect does not affect Tense communication, an Aspect opposition is allowed into any English Tense form. Thus, English has a Continuous and a Perfect version of every Tense. English even allows combining of both Aspect values within a same absolute Tense (Perfect Continuous forms):

Present Tense	I work.
Present Continuous Tense	I am working.
Present Perfect Tense	I have worked.
Present Perfect Continuous Tense	I have been working.
Past Tense	I worked
Past Continuous Tense	I was working.
Past Perfect Tense	I had worked.
Past Perfect Continuous Tense	I had been working.
Future Tense	I shall work.
Future Continuous Tense	I shall be working.
Future Perfect Tense	I shall have worked.
Future Perfect Continuous Tense	I shall have been working.

If only Tense projects, then the only feature of that projection that will be allowed to survive until LF is its intrinsic categorial feature, which is the [T] feature. The [Aspect] feature could exist at LF only as the intrinsic categorial feature of the Aspect projection. Thus, one would have to postulate an Aspect projection as well as a Tense projection. In other words, we would need a separate projection for any feature that we need at LF. This is not always justified. What evidence is there to prove that Aspect projects?

But on the other hand, we do know that the notion of Aspect does get communicated in English. One may try to get around this problem by suggesting that all the above listed forms are, in fact, twelve separate Tenses and that they all check nothing but the [T] feature at LF.

In view of the Serbo-Croat data, I would find this difficult to accept. Aspect did check the [T] feature in Proto-Indo-European and it certainly has something to do with it in modern Arabic, Slavic and some African languages, at least. But, in English and other languages with independent Tense markers, Aspect has no role to play in Tense communication, but only in Aspect marking.

In those languages, Aspect morphology checks the [Aspect] feature and nothing else. But, if we have no evidence that Aspect projects in English, then where at LF is the [Asp] feature based?

If, however, we adopt an Infl projection, we need to decide what feature qualifies as its intrinsic categorial feature. By logic, this feature would have to be an inflectional marker. Both [Asp] and [T] features then count as ideal candidates.

Thus, languages universally project Infl. This projection is universally marked for [T] and [Asp], which universally get checked at LF, irrespective of whether the [Tense] feature is morphologically realised or not. Just in what way the [Tense] feature is checked is a matter of parametric variation across languages. Different elements check different features in different languages.

If a language has Aspect markers (and I have not come across a language that lacks Aspect markers), these Aspect markers will check the [Asp] feature at LF. If a language has Tense markers, they will check the [T] feature at LF. If a language does not have a corresponding category, then the [T] feature will get checked by whatever is available. In English, the [Tense] feature is morphologically realised; in Serbo-Croat and other tenseless languages, it is not.

Thus, languages do have to check the same LF features, but they do not have to do it in the same way. In Serbo-Croat, a [T] feature is checked by a specific set of Aspect and Agreement markers that act compositionally, while in English the [T] feature is checked by Tense.

Similarly, at Spell-Out, English Nominative Case is checked by the same Tense inflection that checks the [T] feature at LF, while in Serbo-Croat the Nominative Case is checked by the same Person+Number cluster that is involved in temporal marking as well. Seen in this way, the Inflection projection will be able to handle any language type.

7) Summary

In this section, we have established the basic clausal structure in Serbo-Croat and concluded that the VP is dominated by a higher projection, which we knew was not the Tense projection. We also knew that this projection must be specified for the strong [N] feature that forces overt subject raising, and that it is not specified for the strong [V] feature, as the main verb does not leave VP until LF.

Our test then showed that Nominative Case in Serbo-Croat is checked by the Person+Number Agreement cluster, as soon as that is possible. Thus, in simple finite forms, Nominative Case is checked while the subject is still in [Spec, VP], against the Person+Number inflection on the main verb. The subject's phi-features are checked at the same time, against the [P+N] on the main verb.

In complex finite forms, the Person+Number inflection is added to AUX. Therefore, Nominative Case is checked after the subject moves to the higher Spec, where it also checks the strong [N] feature. Here, the subject's phi-features are checked separately: [G+N] are checked within VP, against the [G+N] morpheme cluster on the main verb. [P+N] are checked at the same time and place as the Nominative Case, after the subject moves into [Spec, XP].

Phi-features on nouns are +Interpretable and need to survive to LF. Thus, although checked, the Person, Number and Gender features of subjects are not eliminated. Phi-features on verbs are generally -Interpretable and, as such, they should be eliminated before LF. However, since, in Serbo-Croat, phi-features on verbs are involved in temporal marking, they too need to survive to LF and are not erased after they are checked.

In the next stage, we investigated the identity of the mysterious projection above the VP and concluded that Agreement and Aspect do not project. We concluded that the only way one could account for all the requirements concerning the interpretation of both Tense and Aspect, not just in Serbo-Croat, but universally, is to postulate the Inflection projection, whose intrinsic categorial features would be both [T] and [Asp].

We made an important discovery that abstract features do not have to be morphologically realised. Although tenseless languages lack Tense morphology and consequently a Tense projection, the [Tense] feature is universally present at the LF of all natural languages. Whether or not it is morphologically realised, is a matter of parametric variation across languages. In English it is, in Serbo-Croat it is not.

So far, the above applies to the [Tense] feature alone. I did attempt to test whether LF would still contain the [Aspect] feature in languages that lack Aspect markers, but my efforts to find a language that does not have Aspect morphology have failed.

In Serbo-Croat, Aspect of the main verbs checks the [Asp] feature in complex forms, and both the [Asp] and the [T] feature in simple forms. The Aspect of AUX verbs is only involved in [T] feature checking. Serbo-Croat temporal marking is done by corresponding and precise sets of Aspect and Agreement features.

The Primary set of Person and Number markers seem to move the action towards the non-past, the Secondary set pushes the action towards the past, the Gender and Number cluster also contributes past to a form. Regardless of these individual roles that they seem to play, the above factors act only together.

Contrary to the belief that one category checks one feature, features may act as sets and feature checking may be performed compositionally by a chosen selection of categories. Thus, languages sometimes invent formulas for the creation of a particular feature. For example, the formula for the Nominative Case would be : Person+Number, the formula for, say, the Present Finite would be: imperfectiveness+Primary Person+Number, etc...

The above hypothesis accounts for any language type.

On this account, languages universally project Infl. This projection is universally marked for [T] and [Asp], which universally get checked at LF, although in different ways in different languages.

VI CONCLUSION

1) Theoretical claims
2) For further research

1) Theoretical claims

Here is a quick reminder of the content of this thesis. Serbo-Croat finite forms are not marked for Tense. As Serbo-Croat is a tenseless language, temporal relations in this language do not seem to be clearly established in the sense that SC concentrates on properties of actions and not on the moment in time to which they belong. Consequently, any finite form can have any temporal interpretation, and the Perfect (Past) Finite form can replace any other past finite form. We then noticed that there is a link between Aspect and Tense and observed that, in simple finite forms, Aspect is never optional and only the finite forms that apply to both perfective and imperfective verbs are complex and must have an AUX, whose Aspect is always strictly specified.

Serbo-Croat still distinguishes between past and non-past only and future is expressed through the Present Finite.

The interaction between Aspect and Tense is characteristic for all Slavic languages. They each allow both Aspects in the past. Within the non-past, on the other hand, a change of Aspect results in a change of temporal information: imperfectiveness = present, perfectiveness = future.

Similarly, a number of African languages use only imperfectives for the Present Finite. Some West African languages, like Yoruba, do not have specific Tense markers, but distinguish Tense through Aspect markers. Also, in Arabic, perfective verbs are interpreted with perfective and past meaning, while imperfectives are interpreted with imperfective and present meaning.

The pairing of imperfective with present and perfective with past remains a general starting point. If imperfectives and perfectives are found in the same sentence, one expects the perfective action to precede the imperfective action, whatever relative Tenses they denote.

Non-finite forms, as one should now expect, are not subject to Aspect restrictions, which further confirms our claim that tenseless languages use Aspect in Tense marking. An Aspectual opposition alone is not powerful enough to express finer time references. This problem is overcome by giving Agreement a role in Tense marking. Even greater variety is ensured by introducing two different sets of Person and Number markers.

Simple forms convey Person and Number information, while compound forms are marked for Gender as well. They all have the Primary set of Person and Number markers, used for non-past and compound past finite forms, and the Secondary set, used for the Aorist and the Imperfect.

Agreement morphemes appear either in pairs or in a group of three, never alone:

1. Person+Number   (1st and 2nd person pronouns, verbs)
2. Gender+Number   (nouns and adjectives, verbs)
3. Person + Gender+Number   (3rd person pronouns)

When the first two clusters (on verbs) combine with appropriate Aspect values, they result in the following Serbo-Croat finite forms[112] (Table 5.6. repeated):

Table 5.7. Composition of Serbo-Croat finite forms

The Present Finite form

The group 'A' verbs (please see 2.2.)

```
MV    Aspect  =  impfv
AUX   Aspect  =
P + N         =  P1 + N
G + N         =
```

The group 'C' verbs (please see 2.2.)

```
MV    Aspect  =  perf + impfv
AUX   Aspect  =
P + N         =  P1 + N
G + N         =
```


The Aorist Finite form

```
MV    Aspect  =  pfv
AUX   Aspect  =
P + N         =  P2 + N
G + N         =
```

---

[112] See page 148.

The Imperfect Finite form

```
MV    Aspect  =  impfv
AUX   Aspect  =
P + N         =  P2 + N
G + N         =
```

The Pluperfect Finite form

```
MV    Aspect  =  any
AUX   Aspect  =  impfv
P + N         =  P2 + N
G + N         =  (G + N) x 2
```

The Past Perfect Finite form

```
MV    Aspect  =  any
AUX   Aspect  =  impfv
P + N         =  P1 + N
G + N         =  G + N
```

The Future I Finite form

```
MV    Aspect  =  any
AUX   Aspect  =  impfv
P + N         =  P1 + N
G + N         =
```

The Future II Finite form

```
MV    Aspect  =  any
AUX   Aspect  =  pfv
P + N         =  P1 + N
G + N         =  G + N
```

The Present Conditional Finite form

```
MV    Aspect  =  any
AUX   Aspect  =  pfv
P + N         =  P2 + N
G + N         =  G + N
```

The Past Conditional Finite form

```
MV    Aspect  =  any
AUX   Aspect  =  impfv
P + N         =  P2 + N
G + N         =  (G + N) x 2
```

Because the Person and Number Agreement cluster is responsible for Nominative Case assignment/checking, it is obligatory in all finite forms. In this way, it is possible for the Nominative Case to be assigned/checked in non-finite clauses as well, and it is for this reason that Serbo-Croat does not allow Exceptional Case Marking, as in Section 4.5.3. The Nominative Case in Serbo-Croat is checked by the Person+Number Agreement cluster, as soon as that is possible.

In simple finite forms, the Nominative Case is checked while the subject is still in [Spec, VP], against the Person+Number inflection on the main verb. The subject's phi-features are checked at the same time, against the [P+N] on the main verb.

In complex finite forms, the Person+Number inflection is affixed to the AUX. Therefore, the Nominative Case is checked after the subject moves to the higher Spec, where it also checks the strong [N] feature. Here, the subject's phi-features are checked separately: [G+N] within the VP against the [G+N] on the main verb, and [P+N] are checked at the same time and place as the Nominative Case, after the subject moves into [Spec, IP].

There are other languages in which the Nominative Case is assigned/checked by Agreement. Some examples of these languages are Portuguese and Galician.

To account for the properties of both tenseless and tensed languages, we argued that languages universally project Infl and that both [Asp] and [T] features count as its intrinsic categorial features, in order to survive until LF. This projection must be specified for the strong [N] feature that forces overt subject raising, and not for the strong [V] feature, as the main verb does not leave the VP until LF.

The [Tense] feature does not have to be morphologically realised, although all languages invariably seem to have Aspect morphology.

In languages with Tense morphology (e.g. English), Tense markers check the [Tense] feature at LF. In languages without Tense morphology (e.g. Serbo-Croat), the [Tense] feature gets checked at LF in an alternative way.

Serbo-Croat temporal marking is done by corresponding and precise sets of Aspect and Agreement features that act compositionally, contrary to the belief that one category checks one feature. The Aspect of the main verbs checks only the [Asp] feature in complex forms, and both the [Asp] and the [T] feature in simple forms. The Aspect of AUX verbs is only involved in [T] feature checking.

The above hypothesis is able to account for both the English and the Serbo-Croat language type.

Commenting on Bošković's "Selection and the Categorial Status of Infinitival complements" (1996), we have found an alternative solution to the problems that he identified, which relate to the distribution of PRO. We argued that PRO is assigned the Null Case if and only if it is controlled (by subject, object or arbitrarily) and that PRO acquires the Null Case from its controller, not from the Infinitive. Contrary to Bošković's (1996) proposals, Uninflected Infinitives cannot assign any Case in any language.

2) For further research

The analysis of historical data has provided valuable clues for this research, but also highlighted even more questions that still remain unanswered.

Why is it that, although they all have the same common ancestor, some of the languages of the Proto-Indo-European family have developed aTense marker and some have not?

Has the development of Tense morphology had any effect on the development of Aspect and Agreement morphology in the languages of English type?

Or, could it be that, on the contrary, Tense, Aspect and Agreement all developed independently of each other?

This thesis has just scratched the surface of the large area of interaction of Agreement, Aspect and Tense that still remains unresearched..

VII APPENDIX[113]

1) Relevant phonological aspects of the ancestor language
2) Syntactic and morphological facts of the ancestor language
3) Relevant facts of Serbo-Croat phonology
4) Relevant facts of Serbo-Croat syntax
5) Relevant facts of Serbo-Croat morphology

1) Relevant phonological aspects of the ancestor language

The discussion of the relevant phonological aspects of the ancestor language may, at first, seem irrelevant for our inquiry as the topic of this thesis is of a syntactic nature. However, to be able to detect the boundaries of syntactic elements within a word, it is of utmost importance to understand what phonological processes the morpheme combining triggers. These phonological processes often result in drastic phonological changes (loss or change of a consonant or a vowel, etc.) which disguise the syntactic structure of a given word and make the boundaries between the morphemes difficult to detect.

The reconstructed system of Proto-Indo-European (PIE) is quite strange by today's standards (36 short and long diphthongs, plus 20 short and long vowels, an unusual consonant inventory as well). As it is not important for syntactic issues, it will not be discussed, but some phonological properties of Proto-Indo-European (PIE) and Proto-Slavonic (PS) do seem to be relevant.

Slavonic words are morphologically complex, consisting of two or more distinct morphemes. In addition, Slavonic languages all have exceptionally large inflectional systems. Sounds that end up next to each other, when various morphemes are put together, affect each other and enter various phonological processes. They result in phonological changes that may make the boundaries between the morphemes less obvious or even invisible. Without knowing what phonological tendencies these languages have and without being able to recognize the resulting changes, it is impossible to examine these complex units and split them into their components correctly.

Phonological changes affected both vowels and consonants. They were either triggered by morpheme combining, or they resulted from larger phonological transformations that introduced loss or alternation of certain sounds regardless of their environment. Although some of these processes started more than four millennia ago, modern SC phonology shows that some are still ongoing. Among the changes that will briefly be discussed, some had independent causes while some resulted from two main tendencies: the tendency for intrasyllabic harmony and the tendency for rising sonority.

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[113] The material of this entire Chapter is taken from Schenker (1993)

The tendency for intrasyllabic harmony was manifested back to front and affected both consonants (palatalization, yodization) and vowels (fronting of back vowels). Proto-Slavonic (PS) also developed the tendency for rising sonority which arranged phonemes from lower (voiceless spirants = lowest) to higher (vowels = highest) sonority. This tendency resulted in the "law of open syllables" which eliminated word final consonants, affected syllable-initial consonant clusters, gave rise to prothetic semi-vowels, and eliminated diphthongs.

1.2. Consonants

1.2.1. Merger of aspirated and unaspirated stops

At the stage when Proto-Indo-European (PIE) already started disintegrating into language families, certain phonological changes affected only some of those language groups.

In Baltic, Iranian, Albanian and Celtic, aspirated stops merged with unaspirated lax stops. Compare this with the situation in other Indo-European families unaffected by this change (e.g. Latin), where merger did not occur, but these stops were replaced by other sounds:

Table 7.1. Late PIE	Balto-Slavonic	Latin
b	*b*	*b*
bh	*b*	*f*
d	*d*	*d*
dh	*d*	*f*
g	*g*	*g*
gh	*g*	*h*

1.2.2. Changes in palatalized and labialized stops

The labialized velars of LPIE (Late Proto-Indo-European), *kw*, *gw*, *gwh*, and the palatalized velars, *k'*, *g'*, *g'h*, were affected in different ways in different language groups:

- In Slavonic, Baltic, Indic, Iranian, Armenian and Albanian ('satem' languages), the labialized velars (*kw*, *gw*, *gwh*) merged with plain ones and the palatalized velars (*k'*, *g'*, *g'h*) changed into -*s*-, -*z*- and eventually into -*s*-, -*z*- (except in Lithuanian).
- In Tocharian, Anatolian, Greek, Italic, Celtic and Germanic ('centum' languages), the palatalized velars (*k'*, *g'*, *g'h*) merged with plain ones, while the labialized ones (*kw*, *gw*, *gwh*) remained distinct (see Latin below).

Table 7.2. Late PIE	Balto-Slavonic	(later) OCS	(but) Lithuanian	Latin
k	k	k	k	k
g,	g	g	g	g
gh	g	g	g	h
kw	k	k	k	qu
gw	g	ž	g	v
gwh	g	g	g	f
k'	s	s	s	k
g'	ž	z	ž	g
g'h	ž	z	ž	h

1.2.3. Retroflex -s-

In the Eastern group of PIE languages, if -s- was preceded by: -i-, -u-, -r-, -k- and not followed by a stop, it became -š-.
In the first stage, which affected Slavonic, Indic, Iranian and Baltic: -s- > -š- (PIE: ōu̯sī, OCS: ušĭ, 'ears');
In the second stage, which affected Slavonic languages only: -š- > -h- before a back vowel/sonant -s- > -š- > h- (PIE: ōu̯sŏs; OCS: uho, 'ear').

1.2.4. The development of t' and d'

The Early Proto-Slavonic palatal stops -t'- (result of both -ti- and -kt- + front vowel sequences) and -d'- (from the -di- sequence) were affected differently in different dialects.

Table 7.3.	EPS	OCS
su̯āitiā 'candle'	su̯ēt'ā	svěšta
nāktiš 'night'	nāt'ī	noštĕ
media 'boundary'	měd'ā	mežda

1.2.5. The First Palatalization of velars

All the three palatalizations were examples of Proto-Slavonic intrasyllabic harmony. The Balto-Slavonic velars -k-, -g- were not affected in this period, but they were palatalized in the Proto-Slavonic stage, if followed by a front vowel:

Table 7.4.	Nominative	Vocative	
Balto-Slavonic	u̯ĭlk – ŏs	u̯ĭlk – ě	'wolf'
OCS	vlĭkъ	vlĭč – e	
Balto-Slavonic	bāg – os	bāg – ě	'god'
OCS	bogъ	bož – e	

1.2.6. The Second Palatalization of velars

The Second Palatalization affected all Slavic languages, triggered by the new front vowel -e- (from –ai-) acting on the preceding velars -k-, -g-, -h-, changing them to -c-, -z-, -s-/-š- respectively (-h- > -s- in South Slavonic and -h- > -š- in West).

Table 7.5. Early Proto-Slavonic	Late Proto-Slavonic		
	East and South	West	
kăină	cēnă	cēnă	'price'
găil	zēla	zēla	'very'
hair	sēr	šēr	'grey'

1.2.7. The Third Palatalization of velars

The Third Palatalization was caused by any high front vowel, with or without an intervening nasal, acting on the *following* velar. So, after a high vowel, -k-, -g- > -c-, -z-:

Table 7.6. Early Proto-Slavonic	Late Proto-Slavonic		
	East and South	West	
ăuiкā	ăuĭcā	ăuĭcā	'sheep'
lĕikă	līcĕ	līce	'face'
kŭning	kŭnĭnz	kŭnĭnz	'ruler'
uĭh	uĭs	uĭs	'all'

1.2.8. Jotation/yodization (from *yod*, the Hebrew name of 'i')

Proto-Slavonic jotation/yodization was also triggered (and still is) by the tendency for intrasyllabic harmony. A consonant or sonant followed by the front semi-vowel -i- became palatalized.

As a result of yodization of -k-, -g-, -s-, -z-, the sounds -č-, -ž-, -š- (previously positional variants of -k-, -g-, -h-), became independent phonemes.

Table 7.7. Balto-Slavonic	OCS		compare OCS	
plākiōm	plačo	'I cry'	plakati	'to cry'
lŭgiōm	lьžo	'I lie'	lьgati	'to lie'
pĕisiōm	pišo	'I write'	pьsati	'to write'
māziōm	mažǫ	'I smear'	mazati	'to smear'

Labials developed an epenthetic -l- (labial – -i- W labial - -l- - -i-), which was eventually lost in West Slavonic and Bulgarian/Macedonian in non-initial syllables.

Table 7.8. Balto-Slavonic	OCS		compare OCS	
sŭpiōm	sъpljǫ	'I sleep'	sъpati	'to sleep'
gŭbiōm	gybljǫ	'I perish'	gybati	'to perish'
zĕmiā	zemlja	'earth'	zemьnъ	'earthly'

The dental stops *t, d* produced different reflexes in different dialects. For example:

    $t + i > t'$ (or an alternative), $d + i > d'$. (or an alternative).

Similarly, the sonants *-n-, -r-, -l-,* resulted in different changes in different dialects:

    $n - i > n'$, $l + i > l'$, etc.

1.2.9. Elimination of all inherited word final consonants

The tendency for rising sonority in Proto-Slavonic introduced The Law of Open Syllables, which eliminated all word final consonants inherited from Proto-Indo-European.

Table 7.9. Balto-Slavonic	OCS	compare Sanskrit	
sūnŭs	synъ	sūnŭs	'son'
u̯ĭlkād	vlьka	vŗkād	'wolf'

1.2.10 Syllable-initial consonant clusters

Also triggered by the preference for rising sonority, Proto-Slavonic simplified all syllable-initial consonant clusters

Table 7.10. Balto-Slavonic	OCS		compare OCS	
māzsló	maslo	'oil'	mazati	'to spread'
dādmi	damъ	'I'll give'	dadętъ	'they'll give'
sŭpnós	sъnъ	'sleep'	sъpati	'to sleep'

1.3. Vowels

1.3.1. Merger of the Late Proto-Indo-European -o- and -a-

In the entire Balto-Slavonic group, the short vowels *-o-* and *-a-* merged into the short *-a-*.

In Slavonic only, this was extended to the long *-o-* and *-a-*, which merged into the long *-a-* when adjacent.

1.3.2. Prothesis in syllable-initial vowels

The tendency for rising sonority in Proto-Slavonic was manifested in prothesis in syllable-initial vowels. Proto-Slavonic developed the prothetic *-u-* before the long *-ū-* and the prothetic *-i-* before front vowels and, in some dialects, before the long *-a-*.

Eventually, *-u-* became *-v-* and *-i-* became *-j-*, as OCS examples show:

Table 7.11.

* *ūdrā*	* *uŭdrā*	*vydra*	'otter'
* *ĭdōm*	* *ĭ̂dǫ*	*idǫ [jɓ do]*	'I go'
* *ĕsmĭ*	* *i̯ĕsmĭ*	*[j]esmɓ*	'I am'

The short -*a*- remained without prothesis: * *atikos* > OCS, *ot c* 'father'.

1.3.4. Monophthongization of diphthongs

The diphthongs with -*i*- and -*u*- were monophthongized: $\breve{a}i > \bar{e}$ $\breve{a}u > \bar{u}$
$\breve{e}i̯ > \bar{i}$ $\breve{e}u > i̯\bar{u}$

Table 7.12. Balto-Slavonic	EPS	OCS		compare Greek	
bĕr̆ŏitĕ	*bĕrētĕ*	*berĕte*	'take!'	*phéroite*	'bring'
stĕig	*stīgnōm*	*stignǫ*	'I'll reach'	*stéikhō*	'I walk'
lŏŭki̯os	*lūčĭ*	*lūčɓ*	'light'	*loûsson*	'white wood'
bĕu̯d	*bii̯dōm*	*bljudǫ*	'I keep'	*péuthomai*	'I ask'

1.3.5. Consonantization of -*i*- and -*u*-

The Indo-European and the Early Proto-Slavonic semi-vowels -*i̯*- and -*u̯*- were pre- or post- vocalic variants of the vowels -*i*- and -*u*-. When monophthongization of diphthongs limited the semi-vowels to the pre-vocalic position, the status of -*i̯*- and -*u̯*- changed, since they now occupied the position of consonants. The rising syllabic sonority strengthened the consonantal status of both *i* (> *j*) and u (> *w* > *v*):

Table 7.13.

Moi̯ɓ	> *moj*			'my', masc	
moi̯a	> *moja*			'my', fem	
moi̯e	> *moje*			'my', neut	
nou̯ɓ	> *now-*	>	*nov*	'new', masc	
nou̯a	> *nowa*	>	*nova*	'new', fem	
nou̯o	> *nowo*	>	*novo*	'new', neut	

1.3.6. Fronting of back vowels

In Slavonic languages, during the Proto-Slavonic period, -*a*- and -*u*- became -*e*- and -*i*- respectively, if preceded by soft consonants.

Table 7.14. Consider Old Church Slavonic:

Nesomɓ	'carried'	but	*znajemɓ*	'known'
Lɓvovɓ	'leonine'	but	*zmijevɓ*	'serpentine'

Exception: -*e*- became -*a*- after soft consonants. This change involves smaller steps:

Table 7.15.	'to shout'	'to hear'	'to hold'	'to stand'	'to see'
stage 1	*krīkḗtēi	*slūšḗtēi	*dĭrgḗtēi	*stăiḗtēi	*ueidetei
stage 2	*krĭčētēi	*slūšḗtēi	*dĭržētēi	*stăiḗtēi	*ueidetei
stage 3	*krĭčātēi	*slūšātēi	*dĭržātēi	*stăiātēi	*ueidetei
Old Russian:	kričati	slyšati	dъržati	stojati	videti
Dialectal OCS:	kričeti	slyšeti	držeti	stojeti	videti

1.3.7. Vowel alternations

Proto-Indo-European had a system of vowel alternation where:

- the unmarked vowel -e- (in non-derived verbal roots: OCS, grebǫ 'I dig') alternated with -o- (typical of derived nominal roots: OCS, grob 'grave'),
- the short vowel (OSC, blusti 'to watch') alternated with a long one (OCS, bu:diti 'to awaken') or with a zero vowel (OCS, bъdeti 'to be awake').

It seems that the vowel -e- was basic, -a- was marginal, -o- arose as a derived variant of -e-, and -i- and -u- were derived variants of diphthongs.

1.3.8. Differences in vowel quality

Early Proto-Slavonic short vowels were more central than the long ones.

The high short vowels: $\breve{\imath}$ $\breve{u}$ became ь ъ (so called front and back jers)

The low short vowels: $\breve{e}$ $\breve{a}$ became e o.

The Early Proto-Slavonic long back vowels: ȳ ū ā remained as y u a

long front vowels: ī ī fell together into i

long vowels: e e fell together into ě

The OCS vowel -e- (called jat) was either pushed higher (East Slavonic) or back (Lechitic and Bulgarian). This vowel has a dual origin (e > e1 > e, and e > e2 > ai) and therefore different properties: $\breve{e}$ > e1 > ē does not alternate with i

$\breve{a}i$ > ē2 > ē alternates with i

1.3.9. Shortening of long vowels word-finally

LPS pitch oppositions were characteristic only for word-initial long vowels which contributed to shortening of word-final long vowels (affected all Slavonic languages).

Table 7.16.	LPS	Czech	
	*sĕstrā	sestra	'sister'. Nom sing.
	*sĕstrȳ	sestry	'sister'. Gen sing.
	*sĕstrǭ	sestru	'sister'. Acc sing.

1.3.10. Vowel contraction

Late Proto Slavonic developed a tendency to eliminate intervocalic -*j*- and contract the two vowels into a long vowel, which reintroduced word final long vowels.

Table 7.17.

LPS	Russian	Old Polish	Czech	Serbo-Croat	
aja	*nóvaja*	*nowā*	*novā́*	*nȍvā*	'new'
aje	*znájet*	*znā*	*zná*	*znȃ*	'he knows'
oja	*pójas*	*pās*	*pás*	*pojas*	'belt'
eja	*smeját'sja*	*śmijāć się*	*smáti se*	*smějati se*	'to laugh'
ija	*prijátel'*	*przyjaciel*	*přítel*	*prijȁtelj*	'friend'

1.3.11. Jers

The short high vowels -*ĭ*- and -*ŭ*- are called *jers*, *which* is the name given to their OCS reflexes, Ь and Ъ respectively. When word final, they became even shorter, resulting in weak *jers* and shifting the word stress to the preceding syllable. The distribution of weak and strong *jers* was automatic.

They alternated counting from the end of the word (and starting with a weak one). *Jers* were weak word-finally, strong before a weak *jer* and weak before a strong *jer* or any other vowel.

Table 7.18. OCS:

*dĭni	*dьnь* 'day', Nom.	*dьnьmь* 'day', Instr.	
*sŭnu	*sьnь* 'sleep', Nom.	*sьnьmь* 'sleep', Instr.	

The sequences of a *jer* followed by -*j*- and a vowel, ЬjV and jъV, were called *tense jers*. In Old Church Slavonic, ЬjV and jъV were written either as -*i* -and -*y*- or Ь and Ъ. In other Slavonic languages, they behaved like regular *jers*, contracting to -*i*- and -*y*- in strong positions and being lost in weak ones.

Table 7.19.

LPS	OCS	Serbo-Croat	Czech	Russian	
prost-ъ-j-	*prostyi prostъi*	*prȍst*	*prostý*	*prostòj*	' plain'
pit-ь-j-e	*pitie/pitьe*	*píće*	*pití*	*pit'ë*	'drink'

2) Syntactic and morphological facts of the ancestor language

2.1. Introduction

The research on Proto-Slavonic syntax has been mainly concerned with reconstruction of grammatical categories and, to some extent, with their occurence in sentences. As far as Proto-Slavonic morphology is concerned, except for some conjunctions and particles which were simple, Proto-Slavonic words were complex (analysable into two or more discrete morphemes). Adverbs were uninflected. Other complex words which were inflected include nominals (nouns, pronouns, adjectives and numerals) and verbs.

Inflected words were composed of stems and inflection (nominal or verbal). Obligatory inflection marked Case, Person, Number, Gender and Infinitive. Verbs could also have inflection which marked Aspect, Tense, or Mood (e.g. *-ea-* was the imperfect suffix, etc). Some inflectional categories were expressed through independent words (e.g. Auxiliary). Inflection was grammatical (marking negative, perfective, imperfective, diminutive, etc) or lexical (forming adjectives from nouns, etc). As they are not relevant for this thesis, we ignore nominals and concentrate on verbal morphology only.

2.2. Case

Verbs, nouns and prepositions required Case-marked nouns. Transitive verbs inherently required direct objects. Direct objects, indirect objects and subjects were distinguished through their Case markers.

The Nominative Case was the Case of a subject and the predicate complement.
(271) *Ta žena bě **dobraja**. (This woman was **good**.)[114]

The Accusative Case was the Case of the direct object and some temporal expressions:
(272) *Ova žena rodi dъt'erъ. (This woman gave birth to a **daughter**.)
(273) *Ona sę jestъ trudila vъ sъdъnъ (She has worked **all day**.)

The Genitive Case expressed subordination in a sequence of two nouns or a numeral and a noun and, since sometimes it replaced the Accusative Case as the direct object Case, it also denoted quantification as a direct object of verbs, etc:

(274) *Nožъ ot**ъca**. (**father's** knife)
(275) *Pętъ synovъ (five **sons**)
(276) *Mojъ bratrъ sъrete pot**ъnika** (My brother met a **traveler**.)
(277) *Nalija **vody**. (He poured **some water**.)

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[114] * in this and the subsequent examples marks that they are reconstructed rather than attested.

The Dative Case was a directional Case (indirect object), the Case of the agent/beneficiary in impersonal constructions and of the subject of Infinitivals in 'the Dative with Infinitive' constructions:

(278) *Ne dastb jemu vody. (He did not give him any water.)

(279) *Jemu sę ne hъt'etb. (He does not feel like it.)

(280) *Tomu ne byti. (This will not happen.)

The Locative denoted location in time and space: *zimě* 'in wintertime', *gorě* 'above'.

The Instrumental Case signalled the accessory to the performance of an action, an instrument, means or manner of performance: *rezati nozemb* 'to cut with a knife', *pomajati rǫkǫ* 'to wave with one's hand', *jednojǫ* 'once'.

In prepositional phrases, the noun Case depended on the preposition, for example:

u	'in'	+	Locative
pro	'through'	+	Accusative
kъ	'to'	+	Dative
o	'about'	+	Locative
sъ	'with'	+	Instrumental etc

2.3. Voice

The semantic contrast between agent and patient was reduced to the contrast between the structures containing reflexives and pure passive constructions. Those containing reflexives were those in which the distinction between the Passive and Active Voice was blurred, resulting in a kind of Middle Voice that combined the Active and the Passive role, assigning them both to the subject..

ACTIVE: the subject of an active sentence was an agent:

(281) *Mojb   synb   sъpase Ženo.
      my-Nom   son-Nom save   woman-Acc
      (My son saved a woman.)

MIDDLE: the subject-oriented reflexive constructions neutralized the distinction between agent and patient by merging them and assigning both to the subject in Nominative:

(282) *Zena   sę   sъpase.
      woman-Nom herself save
      (The woman saved herself.)

PASSIVE: the role of patient in passive constructions was assigned to the subject which also appeared in the Nominative Case. but as the role of agent was not linked to the subject, it could be specified by a separate constituent. though this was optional:

(283) *Žena   sъpasena bystъ.
      woman-Nom   saved   was
      (The woman was saved.)

2.4. Impersonal constructions

Proto-Slavonic also had constructions that always contained the least marked finite form: 3rd sing neuter, and the subject was presumably obligatorily dropped. This was done in order to neutralize the Person, Number and Gender categories and give the subject of the clause as general a reference as possible. They usually described involuntary or natural phenomena:

(284) *Ne hъt'etъ sę.
      not want-3sing reflexive
      (One does not feel like it.)

(285) *Grъmitъ.
      to-make-thunder-3sing
      (There is thunder.)

(286) *Mъnitъ sę.
      Seem-3sing reflexive
      (It seems.)

2.5. Pro

Proto-Slavonic was probably a pro-drop language, allowing the subject pronoun to be dropped in personal constructions (constructions whose inflection contained the category of Person). Overt subject pronouns were reserved for emphasis:
(287) *Azъ věmъ. (**I** know.)
(288) *Ty věsi.   (**Thou** knowest.)

2.6. Thematic and athematic verbs

2.6.1. Thematic verbs

Most Proto-Slavonic verbs did not add Person and Number markers directly to the root but to the stem, which consisted of the root and a suffix that determined the inflection of that particular verb. Such verbs were called thematic verbs. Suffixes that assigned a stem to a particular inflectional pattern were called thematic suffixes. Verb stems were grouped according to their thematic suffix. Verbs from the same group obeyed the same pattern when inflected. Most Proto-Indo-European thematic suffixes were lost in Proto-Slavonic or they blended with the inflection. Both thematic and athematic verbs had different stems in the Present Finite and related forms and in the Infinitive and related forms. There were seven regular verb classes, listed below. The Present Finite variant is listed first and shown in the 3rd sing and it is followed by the oblique Infinitive variant.

Table 7.20.

(a) -ÿ-/-ÿ- verbs were unproductive and included three subclasses: consonatal, sonantal and semi-vocalic.

Consonantic:

Neset6 [nes-ÿ-e-t6]	nesti [nes-ÿ-ti]	'to carry'
Ree̊et6 [rek-ÿ-et6]	ret'i [rek-ÿ-ti]	'to say'

Sonantic:

P6 net6 [p6n-ÿ-e-t6]	pęti [pen-ÿ-ti]	'to strech'
J6 met6 [j6m-ÿ-e-t6]	jęti [jem-ÿ-ti]	'to seize'
Mret6 [m6r-ÿ-e-t6]	merti [mer-ÿ-ti]	'to die'

Semi-vocalic:

Bijet6 [bij-ÿ-e-t6]	biti [bij-ÿ-ti]	'to beat'
Pojet6 [poj-ÿ-e-t6]	pĕti [poj-ÿ-ti]	'to sing'

(with the semi-vowel *j* lost before consonants through the resolution of syllable initial clusters and monophthongization).

(b) -n- -no- verbs were productive and included: vocalic and consonantal (with typical omission of the verb forming suffix in the Aorist and the Past Participle):

Vocalic (*V-no-*):

Minet6	minǫti	'to pass'
Slynet6	slynǫti	'to be known'

Consonantal (*C-no-*):

Dvignet6 [dvig-n-e-t6]	dvignoti [dvig-no-ti]	'to move'
but: Dvigoh (1st sing Aorist)		

(c) -j- -a- verbs were productive.

Kazet6	kazati	'to say'
Placet6	plakati	'to weep'

(d)-u-j- -ov-a- verbs were productive.

Verujet	vĕrovati	'to believe'
Vojujet	vojevati	'to make war'

(e) -a-j-'-a- and -e-j-/-e- verbs were productive.

Delajet6	dĕlati	'to do'
Umejet6	umeti	'know how'

(f) -i- -i- were productive.

Nosit6 [nos-i-ÿ-t6]	nositi	'to carry'
Modlit6 [modl-i-ÿ-t6]	modliti	'to beg'

(g) -i- -e- verbs were unproductive. In stems with soft consonants, e goes to a.

m6nit6	m6 nĕti	'to think'
vidit6	vidĕti	'to see'
kricit6	kriĕati [kriĕ-e-ti]	'to shout'
stojit6	stojati [stoj-e-ti]	'to stand'.

2.6.2. Athematic verbs

Verbs that added Person and Number markers directly to the root were called athematic. Again, the stem of the Present Finite and related forms was different from the stem used for the Infinitive and related forms. There were four athematic verbs (*-ti* = Infinitive):

Table 7.21.

Jestъ	from	**ĕs-ti*	'he is'
Jastъ	from	** ēd-ti*	'he eats'
Vestъ	from	**uŏid-tĭ*	'he knows'
Dastъ	from	**dād-tĭ*	'he will give'

Except for *jasti* 'to eat', athematic verbs had different stems in the Present Finite (above) and the Infinitive (below):

Table 7.22.

by-ti	'to be'
jas-ti	'to eat'
vědě-ti	'to know'
da-ti	'to give'

2.7. Conjugation

Proto-Indo-European distinguished several sets of Person endings. The endings of the Present Finite (so-called the Primary endings) were opposed to the endings of the past finite forms, the Secondary endings.

These sets had nothing to do with Tense. A same set of Person ending was used for two or more distinct finite forms. In the Indicative, different Person endings were used in the Active Voice and different in the Middle Voice, regardless of the temporal properties of the clause in question. Moreover, some Person endings of the thematic conjugation were different from those of the athematic one. Thus, in the Active Voice, the first and the second singular admitted three distinct endings, the third singular and plural admitted two, and other Persons and Numbers one ending only.

Table 7.23. The active Person endings of Proto-Indo-European:

	Primary		Secondary
	Athematic	Thematic	
1sing	-mi	-o	-m
2sing	-si	-ei (?)	-s
3sing		-ti	-t
3pl		-nti	-nt

2.8. Verbal categories

2.8.1. Genera

Among verbs, Proto-Indo-European differentiated between the Active (or Non-Middle) and Middle diatheses. The Middle category placed a special emphasis on the grammatical subject, making it simultaneously both the agent and the patient (compare the English Active *She opened the door.* with the 'Middle' *The door opened.*). The only way of distinguishing between the Active and Middle opposition was through a set of special inflectional endings. These special endings were eventually lost in Proto-Slavonic. The semantic distinction between the Active and the Middle in Proto-Slavonic was expressed through a new contrast between two Genera: the non-reflexive and reflexive, the latter formally distinguished by the particle *se* 'self'.

2.8.2. Voice

Proto-Slavonic also added a new Voice opposition (Active vs. Passive), formally expressed in the participle only.

2.8.3. Mood

Proto-Indo-European distinguished between four Moods: Indicative, Subjunctive, Optative and Imperative. The Subjunctive (or Conjunctive), known from Vedic Sanskrit, Greek, Latin and Celtic, expressed probability or expectation. Therefore, it was frequently interpreted as the Future Finite. Proto-Slavonic retained the Indicative mood only. It replaced the Subjunctive with the Conditional, in which the resultative participle (so-called the -l-participle), combined with the AUX 'to be'. The Optative, which occurred in Sanskrit, Greek, Latin and Germanic, expressed desire or potentiality. In Proto-Slavonic, it replaced the original Proto-Indo-European Imperative.

2.8.4. Aspect

Aspectual meanings were inherent in Proto-Indo-European finite forms, but Proto-Slavonic introduced two aspects: the perfective (completed action) and the unmarked imperfective, which became an obligatory category of the Slavonic verbs. As Aspect was no longer inherent in finite forms, a new interaction between Aspect and Tense developed. The perfective Present assumed the function of the Future, leaving the imperfective Present as the only pure present. Thus, the Proto-Slavonic Present Finite referred either to present or future (so-called non-past). Proto-Slavonic developed its own Perfect and Pluperfect, formed analytically of the l-participle and, respectively, the Present or the Aorist of the verb 'to be' as AUX. Proto-Slavonic invented an imperfective Future expressed by the Infinitive plus the Present Finite forms of the AUX 'to be', 'to have', 'to want' and 'to begin'.

2.8.5. Finite forms

The Present Finite actions were not completed at the moment of speech. The Aorist viewed actions as completed. The Perfect emphasized the result of an action, thus linking the past (the action) and the moment of speech (the result). The Future was originally expressed through the modalities of the Subjunctive or Optative. The appearance of grammatical Aspect, made the old opposition between the Aorist and the Imperfect unnecessary, resulting in either their disappearance or reinterpretation in the individual Slavonic languages. Specific Imperfect formations, which emphasized non-completion of a past action appeared for the first time in some Late Proto-Indo-European dialects. So did the Pluperfect, which referred to an action prior to the narrated event, and the Future Finite. Proto-Slavonic kept the three Persons of Proto-Indo-European.

2.8.5.1. The Present Finite

Depending on the Aspect of the verbal stem, the Proto-Slavonic Present Finite form referred either to actions simultaneous with (imperfective) or following the moment of speech (perfective). Its Person and Number endings were derived from Proto-Indo-European Primary endings. Thematic verbs added them to the stems extended by the Present suffix.

Conjugation I: in the verb classes *-ў-*, *-no-*, *-a-*, *-ov-a-*, *-a-j-*, the Present Finite suffixes were: *-oh-* in 1 sing, *-o-* in 3 pl, and *-e-* everywhere else.
Conjugation II: in the verb classes *-i-*, *-ě-*, the Present Finite suffixes were: *-oh-* in 1 sing, and *-ў-* everywhere else.

Table 7.24. The Late Proto-Slavonic Present Finite paradigms of the verbs *ěd-* 'to eat', *nes-* 'to carry', *kaz-a-* 'to explain', *děl-a-j-* 'to do', and *modl-i-* 'to ask'

Athematic				Conjugation I		Conjugation II		
sing	1 ja+mъ	from	*ěd-mĭ	nes-ǫ	kaž-o	dělaj-ǫ	modl'-ǫ
	2 ja+si	from	*ěd-sěi(?)	nes-e+ši	kaž-e+si	dělaj-e+ši	modli-ši
	3 jas+tъ	from	*ěd-ti	nes-e+tъ	kaž-e+tъ	dělaj-e+tъ	modli-tъ
dual	1 ja+vě	from	*ěd-ve	nes-e+vě	kaž-e+vě	dělaj-e+vě	modli-vě
	2 jas+ta	from	*ěd-ta	nes-e+ta	kaž-e+ta	dělaj-e+ta	modli-ta
	3 jas+te	from	*ěd-te	nes-e+te	kaž-e+te	dělaj-e+te	modli-te
plur	1 ja+mъ	from	*ěd-mon	nes-e+mъ	kaž-e+mъ	dělaj-e+mъ	modli-mъ
	2 jas+te	from	*ěd-te	nes-e+te	kaž-e+te	dělaj-e+te	modli-te
	3 jad+ętъ	from	*ěd-nti	nes-ǫ+tъ	kaž-o+tъ	dělajo+tъ	modle-tъ

3.8.5.2. The Aorist

The Aorist said nothing about the duration or result of an action, but signalled only that it was completed (perfective). Proto-Slavonic Aorist suffixes were derived from the Proto-Indo-European Secondary (second set) of Person endings and were added to the Infinitive stem. Recall the Active Secondary Person endings of PIE:

Table 7.25. 1sing   -*m*
          2sing   -*s*
          3sing   -*t*   3pl   -*nt*

Initially, Proto-Slavonic had three different Aorist formations. The first two, the Root (or simple) and the Sigmatic Aorist, inherited from Proto-Indo-European, were eventually replaced by the third type which remained the only productive Aorist formation.

a) The Root Aorist combined the roles of Proto-Indo-European thematic Aorist and the Imperfect: instead of thematic suffixes, athematic vowels were added directly to the verb root (in other words, the suffix -*no*- in the -*no*- class verbs was omitted). The thematic vowel was -*e*- before -*t* and -*s* , and -*o*- everywhere else. Note that some Proto-Slavonic vowels combined with word-final -*m*- to produce a nasal vowel (1 sing). The Root Aorist survived in the -*ÿ*- and -*no*- class verbs. Old Church Slavonic data shows that it was used regularly only in the second and third person, while in other persons it was used occasionally with about a dozen stems, such as *jĕd*- 'go', *lez*- 'climb', *mog*- 'be able'.

Table 7.26. The Root Aorist paradigms of *pad*- 'fall' and *dvig-(no-)* 'move':

sing	1	padъ	dvigъ	(from dvig-o-m)
	2	pad-e+	dviž-e+	(from dvig-e-s)
	3	pad-e+	dviž-e+	(from dvig-e-t)
dual	1	pad-o+vě	dvig-o+vě	
	2	pad-e+ta	dviz-e+ta	
	3	pad-e+te	dviz-e+ta	
plur	1	pad-o+mъ	dvig-o+mъ	
	2	pad-e+te	dviz-e+te	
	3	pad-ǫ+	dvig-ǫ+	(from dvig-o-nt)

b) The Sigmatic (the consonant -*s*- preceded the Person endings) Aorist was used with the verbs of the -*i*- class and with sonantal and about twenty consonantal verbs of the -*ÿ*- class, i.e. *greb*- 'bury', *met*- 'stir', *tek*- 'run'. In the first Person of all the Numbers, -*s*- was followed by the thematic vowel -*o*-. No thematic vowel appeared in the other persons.

Table 7.27. The Sigmatic Aorist paradigms of the verbs *bod*- 'pierce', and *nos-i* 'carry', and partial paradigms of *čъt*- 'read', *pьn-/pe*- 'strech', *mьr-/mer*- 'die' in LPS:

sing	1	ba-sъ	(from *bod-s-o-m)	nosi-hъ	(from *nos-i-s-o-m)
	2	bod-e+	(Root Aorist)	nosi+	(from *nos-i-s-s)
	3	bod-e+	(Root Aorist)	nosi+	(from *nos-i-s-t).
dual	1	ba-s-o+vě		nosi-h-o+vě	
	2	ba-s-ta	(from *bod-s-ta)	nosi-s+ta	(from *nos-i-s-ta)
	3	ba-s-te		nosi-s+te	
plur	1	ba-s-o-mъ		nosi-h-o-mъ	
	2	ba-s-te	(from *bod-s-te)	nosi-s-te	
	3	ba-s-ę	(from *bod-s-nt)	nosi-š-ę	(from *nos-i-s-nt)
sing	1	čisъ	(from *kit-s-o-m)	pęsъ (from *pen-s-o-m)	merhъ (from *mer-s-o-m)
plur	2	čiste	(from *kit-s-te)	pęste (from *pen-s-te)	merste (from *mer-s-te)
	3	čisę	(from *kit-s-nt)	pęsę (from *pen-s-nt)	meršę (from *mer-s-nt)

c) The Productive Aorist was a Proto-Slavonic invention by analogy with the Sigmatic Aorist of the -i- class verbs. With vocalic verbs, (all verbs except those of the -ỹ- class and the consonantal verbs of the -no- class), this must have been triggered by the forms in which -s- was pre-consonantal, that is, by the environments in which all the vocalic class verbs (including -i-) developed similarly.

Table 7.28. Compare nos-i- 'carry' and del-a-j- 'do':

sing	2	nosi+	(from *nos-i-s-s)	děla+	(from *del-a-s-s)
	3	nosi+	(from *nos-i-s-t)	děla+	(from *del-a-s-t)
plur	2	nosi-s+te		děla-s+te	(from *del-a-s-te)

By analogy, these similarities spread to the cases where the -i- class verbs was different from other vocalic verbs: cases in which -s- was pre-vocalic.

Thus, such phonologically regular forms as 1 sing, 1 plur and 3 plur of nos-i- 'carry' above created analogical forms as in kaz-a 'explain', ver-ov-a- 'believe', del-a-j- 'do', vid-e 'see':

Table 7.29.

sing	1	nosi-h-ъ	kaza-h-ъ	verova-h-ъ	dela-h-ъ	viдě-h-ъ
plur	1	nosi-h-omъ	kaza-h-omъ	verova-h-omъ	dela-h-omъ	viдě-h-omъ
	3	nosi-s-ę	kaza-š-ę	verova-š-e	dela-š-ę	viдě-š-ę

With the verbs whose Infinitive stem did not end in a vowel (-ỹ- and most -no- verbs), so-called consonantal, the analogy must have been triggered by the similarities of the Root Aorist 2 and 3 sing (they ended in a vowel, like the Sigmatic Aorist forms of the -i- class).. Compare nos-i- 'carry' and ved- 'lead':

Table 7.30.

sing	2	nosi	(from *nos-i-s-s)	vede	(from *ued-e-s)
	3	nosi	(from *nos-i-s-t)	vede	(from *ued-e-t)

Such forms resulted in the creation of Productive Aorist in which the abstracted endings of the -i- class were added to the non-lengthened roots of the consonantal verbs. The thematic vowel was -e- in West Slavonic and -o- in South and East Slavonic:

Table 7.31.

sing	1	vedehъ		vedohъ
plur	1	vedehomъ		vedohomъ
	3	vedehǫ	(-ho, from the Imperfect)	vedošę

All the consonantal verbs had Productive Aorist. except the stems in -r. which had the Sigmatic Aorist only. In some verbs. the Productive Aorist competed with one of the unproductive types.

This can be seen in different Aorist formations in Old Church Slavonic. jj/i- /j/ d- 'go'. mog- 'be able'. dvig-no- 'move', čьt- 'read', /j/ mъ/j/e- 'take'. rek- 'say'

Table 7.32.

Root		Sigmatic		Productive	
1 sing	3 plur	1 sing	3 plur	1 sing	3 plur
idъ	*idǫ*			*idohъ*	*idošę*
mogъ	*mogǫ*			*mogohъ*	*mogoše*
dvigъ	*dvigǫ*			*dvigohъ*	*dvigoše*
		čisъ	*čisę*	*cětohъ*	*cětoše*
		rěhъ	*rěse*	*rekohъ*	*rekošę*

2.8.5.3. The Imperfect

Proto-Slavonic interpreted the Proto-Indo-European Imperfect as the Root Aorist. Thus, the original Imperfect had to be replaced by a new one. This new Proto-Slavonic Imperfect was used to signal a past action that was not completed, with a particular emphasis on its duration or repetition. As such, it could only be used with imperfective verbs. The inflection was added to Infinitive stems, although some irregular verbs used the Present Finite stems. The oldest Imperfect forms were built on Infinitive stems.

The Proto-Slavonic Imperfect consisted of:
- The Imperfective suffix *-ěa-* or *-aa-*.
- *-s-* from Sigmatic Aorist,
- Root Aorist endings (Proto-Indo-European Secondary Person endings,
   preceded by a thematic vowel: *-e-* before *-s-* and *-t-*, and *-o-* elsewhere).

Table 7.33. The paradigms of the Imperfect of *nes-i-* 'carry', *mog-* 'be able', *del-a-j-* 'do', *vid-e* 'see', *nos-i-* 'carry' in Late Proto-Slavonic:

sing *1*		*nes-ěa-s+o+m*	>	*nes-ěa-h+o+m*	>	*nes-ěa-h+ъ*
	2	*nes-ěa-s-e+s*	>	*nes-ěa-s-e+*	>	*nes-ěa-s-e−*
	3	*nes-ěa-s-e+t*	>	*nes-ěa-s-e+*	>	*nes-ěa-s-e−*
dual *1*		*nes-ěa-s-o+ve*	>	*nes-ěa-h-o+vě*	>	*nes-ěa-h-o−vě*
	2	*nes-ěa-s-e+ta*	>	*nes-ěa-s-e+ta*	>	*nes-ěa-š-e−ta*
	3	*nes-ěa-s-e+te*	>	*nes-ěa-s-e+te*	>	*nes-ěa-s-e+te*
plur *1*		*nes-ěa-s-o+m*	>	*nes-ěa-h-o+mъ*	>	*nes-ěa-h-o+mъ*
	2	*nes-ěa-s-e+te*	>	*nes-ěa-s-e+te*	>	*nes-ěa-s-e−te*
	3	*nes-ěa-s-o+nt*	>	*nes-ěa-h-o+nt*	>	*nes-ěa-h+ǫ*

sing *1*		*mož-aa-h−ъ*	*děl-aa-h−ъ*	*vid-ea-h+ъ*	*noš-aa-h−ъ*
	2	*mož-aa-š-e−*	*děl-aa-š-e−*	*vid-ea-s-e+*	*noš-aa-š-e+*
	3	*mož-aa-š-e−*	*děl-aa-š-e−*	*vid-ea-s-e+*	*noš-aa-š-e−*
dual *1*		*mož-aa-h-o−vě*	*děl-aa-h-o−vě*	*vid-ea-h-o+vě*	*noš-aa-h-o+vě*
	2	*mož-aa-š-e−te*	*děl-aa-š-e−te*	*vid-ea-š-e−te*	*noš-aa-š-e+te*
	3	*mož-aa-š-e−te*	*děl-aa-š-ete*	*vid-ea-š-e−te*	*noš-aa-š-e−te*
plur *1*		*mož-aa-h-o−mъ*	*děl-aa-h-o−mъ*	*vid-ea-h-o+mъ*	*noš-aa-h-o−mъ*
	2	*mož-aa-š-e−te*	*děl-aa-š-e−te*	*vid-ea-š-e−te*	*noš-aa-š-e−te*
	3	*mož-aa-h-ǫ*	*děl-aa-h-ǫ*	*vid-ea-h-ǫ−*	*noš-aa-h-ǫ−*

2.8.6. Non-finite forms

Proto-Slavonic non-finite forms were: Infinitive, Supine, Participles and verbal nouns. The Infinitive and the Supine were derived from Case forms of Proto-Indo-European deverbal nouns. Participles and verbal nouns combined the functions of verbs with those of adjectives and nouns, respectively.

2.8.6.1. The Imperative

Of all the Indo-European languages, only Proto-Slavonic derived its Imperative from the Proto-Indo-European Optative mood. The Proto-Indo-European Optative of athematic verbs was formed of the optative suffix -jē- (sing) and -ī- (dual and plur), followed by the Secondary Person endings. The Optative suffix of the thematic verbs was -ŏ-ī. The Proto-Slavonic Imperative introduced a few changes:

in the athematic conjugation,	the Proto-Indo-European suffix -jē- was replaced by -u-;
in the thematic conjugation,	the Proto-Indo-European sequence -ŏ-ī- yielded the diphthong -ōi-, which (after i) was fronted to -ēi- and monodiphthongized to -ī-.

-i- became the favourite Imperative ending and spread to the other Imperative forms.

OCS:	2 sing	beri	rьci	dvigni	mьni	nosi
	2 plur	berete	rьčete	dvigněte	mьnite	nosite
		take!	say!	move!	think!	carry!

2.8.6.2. The Infinitive and the Supine

The morphologically simplest verbal forms were the Infinitive and the Supine. They were marked only for the two obligatory verbal categories, Aspect and Genus, and they were linked with Proto-Indo-European deverbal nouns in the suffix -t-. Although ending in a consonant, if the case inflection of the nouns with -ī- and -ŭ- stems were added to these verbal nouns, they could provide clues to the origin of the Infinitive and the Supine endings, -ti and -tъ. Semantically, there is a connection between the Infinitive and the Dative Case, but the phonological properties of the Infinitive ending -i hints that it probably comes from the long diphthong -ei, the Locative singular ending.

The form and the function of the Supine (specification of goal or purpose with verbs of motion) suggest that its Proto-Indo-European root must have been the Accusative singular suffix -ŭm, used for nouns with -ŭ- stems. The Supine was functionally more restricted and it was eventually replaced by the Infinitive in most Slavic languages. Because of its semantic and formal simplicity, the Infinitive is traditionally used as the citation (dictionary) form of Slavic verbs.

2.8.6.3. The Participles

Some Proto-Slavonic forms combined the functions of verbs and adjectives or nouns. The former are known as participles, the latter as verbal nouns. Participles were inflected for: adjectival (Case, Number, Gender and Specificity) and verbal categories (Voice, Aspect, Genus and Finiteness). Temporal properties were defined indirectly; action simultaneous with the action of the main verb was expressed through the Present Participle, while the action that preceded the main verb action was in the Past Participle. Depending on their temporal and Voice properties, Participles were classified into:
a) Present Active Participle,
b) Present Passive Participle,
c) Past Active Participle, and
d) Past Passive Participle.

a) Present Active Participle was formed of the Present stem, and the suffix -*nt*-, extended by -*i*-, except in the Nominative sing masc/neut. The Present Finite suffix was:
- in Conjugation I, -*ŏ*-/-*i̯*-*ŏ̆*- (with -*i*-*o*- fronted to -*i*-*e*- in the Nom sing masc/neut),
- in Conjugation II, -*ěi*,
- in athematic verbs -*ęt*- (from -*nt*-).

The declension of Proto-Indo-European Present Active Participle of athematic verbs:

Nom sing fem	-*i*-
Nom sing masc	-*s*
Nom sing neut	-
Nom plur masc	-*es*

The declension of Proto-Indo-European Present Active Participle of thematic verbs:

Nom sing masc	-*ŏ*-*nt*-*s*	(later, $o > \bar{u} > y'a$)
Nom sing neut	-*ŏ*-*nt*-	(later, $o > \bar{u} > y'a$)

Table 7.34.The Present Active Participle of the Proto-Indo-European verbs: *mog*- 'be able', *del-a-j*- 'do', *nos-i* 'carry'

Nom sing fem	*mogǫt'-i-*	*dělajot'-i-*	*nosęt'-i-*
Nom sing masc	*mogy/moga*	*dělaj-ę*	*nos-ę*
Nom sing neut	*mogy/moga*	*dělaj-e*	*nos-ę*
Nom plur masc	*mogǫt'-e*	*dělajǫt'-e*	*nosęt'-e*
Gen sing masc	*mogǫt'-a*	*dělajǫt'-a*	*nosęt'-a*
Gen sing neut	*mogǫt'-a*	*dělajǫt'-a*	*nosęt'-a*

b) The Present Passive Participle was formed from the Present Finite stem of transitive imperfective verbs, adding the suffix -*m*-.
Conjugation I verbs with -*i*- stems fronted the thematic suffix -*ŏ*- to *ě*.
Conjugation II verbs monophthongized the -*ěi*- to -*i*-
Athematic verbs showed an analogical thematic suffix -*ŏ*- and behaved as -*ŏ*- (masc/neut) or -*ā*- (fem) stems.

Table 7.35. The Present Passive Participle of the Proto-Indo-European verbs: *ved-* 'lead', *dvig- (no-)* 'move', *pros-i-* 'ask', *děl-a-j-* 'do', *vid-ě* 'see'

Nom sing fem	*vedъši*	*dvigъši*	*prošъši*	*dělavъši*	*vidévъši*
Nom sing masc	*vedъ*	*dvigъ*	*prošъ*	*dělavъ*	*vidévъ*
Nom sing neut	*vedъ*	*dvigъ*	*prošъ*	*dělavъ*	*vidévъ*
Nom plur masc	*vedъše*	*dvigъše*	*prošъše*	*dělavъše*	*vidévъše*
Gen sing masc	*vedъša*	*dvigъša*	*prošъša*	*dělavъša*	*vidévъša*
Gen sing neut	*vedъša*	*dvigъša*	*prošъša*	*dělavъša*	*vidévъša*

c) The Past Active Participle was formed from the Infinitive stem adding the Proto-Indo-European suffixes *-йs- -йes-/-йos-* , which Proto-Slavonic simplified to *-йs- -йus-*. Except in the Nom sing masc/neut, *-йs- /-uйs-* were extended by *-i-* which changed them into *-йs-/-uйs* and later into *-ъš-/-vъš* (*-ъš-* with the *-ў-* and *-i-* classes and the consonantal verbs of the *-no-* class, and *-vъš* elsewhere). Except in the Nom sing fem/masc/neut and in the Nom plur masc, it had the thematic *-i-o* for masc/neut and *-i-a-* for fem types.

d) The Past Passive Participle was formed from the Infinitive stem of transitive verbs and the *-t-* or *-n-*. Its Case inflection was that of the *-o-* (masc/neut) and *-a-* (fem) noun stems.

Table 7.36. The Past Passive Participle in the Nom sing masc of the Proto-Indo-European verbs: *pъn-/pe-* 'climb', *jъm-/je-* 'seize', *ukaza-* 'indicate', *sъ-děl-a-j-* 'make', *prived-* 'bring', *dvig-(-no-)* 'move', *pъr-/per-* 'push', *tъr- ter-* 'rub', *dar-ov-a-* 'donate', *u-viděl-* 'see', *nos-i-* 'carry', *rod-i-* 'give birth'.

Petъ *jetъ* *ukazanъ* *sъdelanъ* *privedenъ* *dvižen/dvignovenъ*
pr'tъ *tr'tъ* *darovanъ* *uvidenъ* *nosenъ* *rodenъ*

e) The Resultative Participle (formed from the Infinitive stem with the suffix *-l-*, the *l*-participle) emphasized the result of a completed action. Its case inflection was that of the *-ǒ-* (masc/neut) and the *-ã-* (fem) noun stems. It was regularly used in compound verbal categories (Perfect, Conditional, etc) together with a finite form of 'to be'.

2.8.6.4. Verbal nouns

Verbal nouns were formed from the Past Passive Participle, adding the suffix *-ii- - j-*. Unlike the Past Passive Participle, verbal nouns were formed from both transitive and intransitive verbs. They were marked for Case, Number, Aspect, and Genus.

Table 7.37.

pri-nes-	'bring'	*prinesenъje*	'the bringing'
dvig-(nǫ-)	'move'	*dviženъje*	'movement'
děl-a-j-	'do'	*delanъje*	'the doing'
mъn-ě-	'consider'	*mъn-eъ*	'consideration'
nos-i-	'carry'	*nošenъje*	'the carrying'

3) Relevant facts of Serbo-Croat phonology

3.1. Consonants

3.1.1. Merger of aspirated and unaspirated stops

As aspirated stops disappeared from the Balto-Slavonic period, the Serbo-Croat inventory of stops contained only unaspirated ones.

3.1.2. Changes in palatalized and labialized stops

Since labialized velars merged with the plain ones in the PS period, labialized velar stops are not part of the SC consonant system.

3.1.3. Retroflex -*s*-

The process -*s* > *š* > *h*- has been completed and is inactive today. The transformation of –*š* > *h*- will be relevant in the discussion of the Aorist endings.

3.1.4. The development of *t'* and *d'*

The reflexes of *t'* and *d'* in modern languages fall into five groups:
- *st, zd*   in Bulgarian (as in OCS),
- *ć, đ*   in Serbo-Croat,
- *k', d'* in Macedonian,
- *c,*   in Slovene and East Slavonic (becoming j in Slovene and z in Russian),
- *c,*   in West Slavonic (c becoming z in Czech and Sorbian).

Table 7.38.	EPS	OCS	Serbo-Croat	Russian	Polish
	suét'ā 'candle'	*svěšta*	*sveća*	*sveca*	*swieca*
	nãt'ĭ 'night'	*noštĭ*	*noć*	*noc*	*noc*
	měd'a 'boundary'	*mežda*	*međa*	*meza*	*miedza*

Besides word-internally, Serbo-Croat stem-final -*t*- and -*d*- may be affected by a suffix-initial -*j*-, i.e: *list* 'leaf' – *je* (plur) >   * *listje* > * *lisće* > *lišće*

3.1.5. The First Palatalization of velars

The tendency for intrasyllabic harmony is still active and responsible for many ongoing phonological changes in Modern Serbo-Croat. The sounds -*k*-, -*g*-, -*h*-, /k, g, h/, followed by a front vowel, change into -*č*-, -*ž*-, -*š*- /tʃ,ʒ, ʃ/.

This happens mainly in inflection and word formation as all morpheme-internal cases are already palatalized. The conditioning is partly morphological (and lexical) as not every example of these segments provokes the change.

Table 7.39.
Example: when a noun ending in -k-, -g-, or -h- has the vocative suffix -e added to it, the stem final consonant is palatalized:

vojnik 'soldier'	+ e	>	vojniče! (*vojnike!)
Bog 'God'	+ e	>	Bože! (*Boge!)
siromah 'poor man'	+ e	>	siromaše! (*siromahe!)

3.1.6. The Second Palatalization of velars

The sounds -k-, -g-, -h-, [k, g, h], followed by -i-, change into -c-, -z-, -s- [ts, z, s]. This also happens mainly in inflection and word formation.

Table 7.40.
Example: when a verb stem ending in k, g, or h has the Imperative suffix -i added to it, the Second Palatalization is triggered:

rek- 'to say'	+ i	>	reci (*reki)
pomog- 'to help'	+ i	>	pomozi (*pomogi)
vrh- 'to tresh'	+ i	>	vrsi (*vrhi)

3.1.7. The Third Palatalization of velars

The Third Palatalization was completed in Late Proto-Slavonic and it is not active today. However, in Modern Serbo-Croat, the sounds that resulted from the Third Palatalization are subject to further change.

Almost all -c- and -z- sounds produced through the Third Palatalization change into -č- and -ž- respectively, when followed by a front vowel:

Table 7.41.

stric 'father's brother'	+	e (Vocative)	>	striče! (*strice!)
stric 'father's brother'	+	evi (plur)	>	stričevi (*stricevi)
knez 'ruler'	+	e (Vocative)	>	kneže! (*kneze!)
knez 'ruler'	+	evi (plur)	>	kneževi (*knezevi)

3.1.8. Jotation/yodization

In all Slavic languages, the First Palatalization (also Yodization), produced -č-, -ž-, -š- from -k-, -g-, -h-. The Third Palatalization (also Yodization) changed -s-, -z- into -š-, -ž-. Modern Serbo-Croat keeps the old Proto-Slavonic Yodization.

Table 7.42.

- labials+j W labials+l+j W labials+lj ($p > plj$, $b > blj$, $m > mlj$, $v > vlj$, $f > flj$):
ljubiti 'to kiss' - *ljubljen* 'kissed', passive
zasarafiti 'to tighten a screw' - *zašarafljen* 'tightened', passive

- *s, z* alternate with *š, ž*:
nositi 'to carry' - *nošen* 'carried, passive'
paziti 'to look after' - *pažen* 'looked after, passive'

- *t, d,* alternate with *ć, đ*:
*nokti W *noć* 'night'
*medja W *međa* 'boundary'

- *k, g, h* alternate with *č, ž, š* (the First Palatalization):
vuk 'wolf' - *vučiji* 'wolf's'
vrag 'devil' - *vražiji* 'devil's'
mahati 'to wave' - *maše* 'waves', present, 3 sing

- *c* alternates with *č*:
baciti 'to throw'   *bačen* 'thrown', passive

- *l, n* alternate with *lj, nj*:
hvaliti 'to praise' - *hvaljen* 'praised', passive
braniti 'to defend' - *branjen* 'defended', passive

Various palatals, *-r-*, the *-st-* group are unaffected.

3.1.9. Syllable-initial consonant clusters

Serbo-Croatian is still in the process of simplifying or modifying the remaining consonant clusters inherited from Proto-Slavonic.

Table 7.43.

Double consonants simplify:
bez 'without'+*značajan* 'significant' > **bezznačajan* > *beznačajan* 'without significance'

Dental stops drop before affricates:
otac 'father' + *a* (gen)   > ** otca*   > *oca* 'father'. Gen
otac 'father' + *evi* (plur) > ** otčevi* > *očevi* 'fathers'

T and -d- are lost between -s-, -z-, -s-, -z-, -n-, -l-, or some other consonants:
radostan 'joyful' (masc + *a* = fem) > **radostna* > *radosna* etc

3.1.10. Assimilation in voicing

Although it existed in Proto-Slavonic to some extent, this process was fully activated after the fall of *jers* (discussed under vowel changes). The last member of any cluster of obstruents controls the quality of the others by imposing on them the same quality, voiced or voiceless. No cluster contains both voiced and voiceless obstruents.

Table 7.44.

raz + čistiti 'to clean'	>	* *razčistiti*	> *rasčistiti* 'to clear up'
redak 'rare' + *a* (fem)	>	* *redka*	> *retka* 'rare', fem
sveza- 'bind' + *-ka*	>	* *svezka*	> *sveska* 'notebook'
primijeti- 'notice' + *-ba*	>	* *primjetba*	> *primjedba* 'comment'

In the reverse process of 'cluster breaking', a consonant devoiced in a cluster, regains its voicing, while the one that has been voiced remains voiced:

Table 7.45.

sveska 'notebook', Nom sing	>	*svezaka* 'notebook, gen plur
primjedba 'commen't, Nom sing	>	*primjedaba* 'comment, gen plur

3.2. Vowels

3.2.1. Merger of late proto-indo-european *-o-* and *-a-*

This rule is still active in Modern Serbo-Croat. Morpheme internally, *o* and *a* cannot be found next to each other any more, as they have all been merged already. However, combining morphemes and inflecting words may still trigger this process. The example below shows a noun ending in *-o* having the Genitive marker *–a* added to it. The vowels *-o-* and *-a-* that end up together in this way merge into *-a-*, thus slightly masking the line between the noun stem and inflection: *oko* 'eye' (Nom) + *a* > **okoa* > *oka* 'eye' (Gen).

3.2.2. Prothesis in syllable-initial vowels

Whether this tendency can still be monitored in Modern Serbo-Croat or not is not of great importance for this study although it provides a clue for the correct analysis of the Present Finite of the verb *biti* 'to be' which will be discussed later.

3.2.3. Monophthongization of the diphthongs

Monophthongization of diphthongs was completed long before Proto-Slavonic started disintegrating into individual Slavic languages. As a result, from 36 diphthongs and 20 pure vowels that Proto-Indo-European had a potential for, Serbo-Croat has never had any diphthongs and its vowel inventory is reduced to 5.

Even if, after application of morphology, two vowels find themselves adjacent to each other, this situation is not generally tolerated and, if they do end up as immediate neighbours, they usually either merge or one of them is dropped:

trča- 'run' + *u* (3 plur) > *trče*

vide- 'see' + *u* (3 plur) > *vide*

If, for whatever reason, this has to be prevented, a glide is introduced in order to separate and prevent the vowels from affecting each other.

priča- 'talk' + *u* > *priča* + *j* + *u* > *pričaju*.

3.2.4. Fronting of back vowels

Vowel fronting is still an active process in Modern Serbo-Croat. It is difficult to determine the exact conditions as the vowel fronting rule does not apply in all cases. Particularly interesting are the examples *kriča-* 'scream' and *priča-* 'talk'. They have almost identical stems and the same inflection; still, vowel fronting applies to *kriča-* 'scream'. It could be the case that this phonological change is determined lexically, or that it has something to do with the origin of the affected vowel. For example, the vowel *a* that undergoes fronting in *kriča-* > *kriči-* was already front in the Proto-Slavonic period (stages 1 and 2 above) before it was pushed back. On the other hand, it may be the case that the vowel *a* in the stem of *priča-* has always been a back vowel which may be what determines its resistance to Present Finite fronting.

Table 7.46.

Example: The Present Finite inflection may front the stem final vowel, but not always, so there is a possibility that this is lexically determined.

trča- 'run' + *m/s/ø/mo/te/u* > *trčim, trčiš, trči, trčimo, trčite, trče*

plaka- 'cry' + *m/s/ø/mo/te/u* > *plačem, plačes plače, plačemo, plačete, plaču,*

kriča- 'scream' + *m/s/ø/mo/te/u* > *kričim, kričiš, kriči, kričimo, kričite, kriče*

but,

priča- 'talk' + *m/s/ø/mo/te/u* > *pričam, pričaš, priča, pričamo, pričate, pričaju.*

sluša- 'listen' + *m/s/ø/mo/te/u* > *slušam, slušaš, sluša, slušamo, slušate, slušaju*

3.2.5. Vowel alternations

Table 7.47. Modern Serbo-Croat alternates *o* and *e*:   -o-   >   -e-   after palatal consonants and their descendants [*č, dž, š, ž, ć, đ, j, lj, nj, c, s, zd, r, z*]:

grad	'city'	–	*ovi* (plur) >	*gradovi*				
drug	'friend'	–	*ovi* (plur) >	*drugovi*				
sat	'watch'	–	*ovi* (plur) >	*satovi*				
but:								
muž	'husband'	–	*ovi* (plur) >	* *mužovi*	>	*muževi*		
zmaj	'dragon'	–	*ovi* (plur) >	* *zmajovi*	>	*zmajevi*		
otac	'father'	–	*ovi* (plur) >	* *otcovi*	>	* *otčevi*	>	*očevi*

3.2.6. Differences in vowel quality

The vowel *e [Ê], jat*, was kept in all Serbo-Croat dialects but its reflexes vary.

In *ekavijan* dialects, it was preserved as *-e-*:
*reka 'river' > *rijeka,*
*vera 'faith' > *vera.*
In *ikavijan* dialects, *jat* changed into i:
*reka 'river' > *rika,*
*vera 'faith' > *vira.*
In *ijekavijan* long syllables, *jat* survived as *ije*: **reka* 'river' > *rijeka,*
or as *je*, in short syllables: **vera* 'faith' > *vjera,*
unless preceded by Consonant + *r*, when it remains *e*: **hren* 'horseradish' > *hren.*

In all the three dialects, *jat* became *-i-* before *-j-*: ** novejбj* 'newer' > *noviji*
or before *-o-*, which is an alternant of *-l-*: **delб* 'part' > *dio.*

3.2.7. Shortening of long vowels word-finally

This process is still evident in Modern Serbo-Croat. It is unusual (though they do exist) to come across a word with a long word-final vowel. This fact may be of importance when analyzing complex lexical units: short vowels may indicate morpheme boundaries, while long vowels may indicate the opposite.

3.2.8. Vowel contraction

This tendency still remains in Modern Serbo-Croat, and is evident in examples like:
pojas   also: *pas*   'belt'
poznajem   also: *poznam*   'know', Present 1 sing

3.2.9. *Jers*

Jers give clues to Modern Serbo-Croat vowel-zero alternations. Both *jers* have developed into *a* in strong positions, while they are dropped from weak sites:
* pбsб > *pas* 'dog' ** sбnб* > *san* 'dream'

If a weak position becomes strong due to an added inflection, the zero vowel surfaces as *-a-*: ** pбs* > *pas* – *u* > **pasu* > *psu* 'dog'. Dat
* sбn > *san* – *u* > ** sanu* > *snu* 'dream'. Dat

Thus, *-a-* appears in word forms with zero-ending, but not in related forms with vowel ending: *nužan* 'sad', masc   *nužna* 'sad', fem
          išao 'go', masc, from **išal* *išla* 'go', fem

3.2.10. Change of *l* to *o*

This is a relatively new process that changes word-final and pre-consonantal *-l-* into *–o-*. If it results in *-oo-* sequence, this contracts to long *-o-*.

Table 7.48. Masc forms of verb l-participle are examples of this phenomena word-finally:

dal- 'give'	>	*dao*	(masc)
	>	*dala*	(fem)
ubol- 'stab'	>	*ubo*	(masc)
	>	*ubola*	(fem)

4) Relevant facts of Serbo-Croat syntax

4.1. Word order in Serbo-Croat declarative clauses

4.1.1. Basic constituents

The word order in Serbo-Croat is, to a large extent, regulated by pragmatics. The basic word order in Serbo-Croat is SVO and it is used whenever all the arguments are known to the participants in conversation and the verb has unsurprising meaning, or whenever the arguments and the predicate are all new in the discourse.

The basic tree structure consists of VP, dominated by a higher projection. According to Chomsky (1995), this is the Tense projection.

However, in the preceding Chapters, I have argued for the absence of Tense morphology and therefore the absence of a Tense projection from SC and given arguments why the projection in question should be universally taken to be the Infl projection.

(289) Moja sestra   čita   knjige.
my-Nom sister-Nom   *read-3sing*   *book-plur*
(My sister reads books.)

(290) Neki čovjek   obija   auto.
some-Nom man-Nom   *break-into-3sing*   *car-Acc*
(Some man is breaking into a car.)
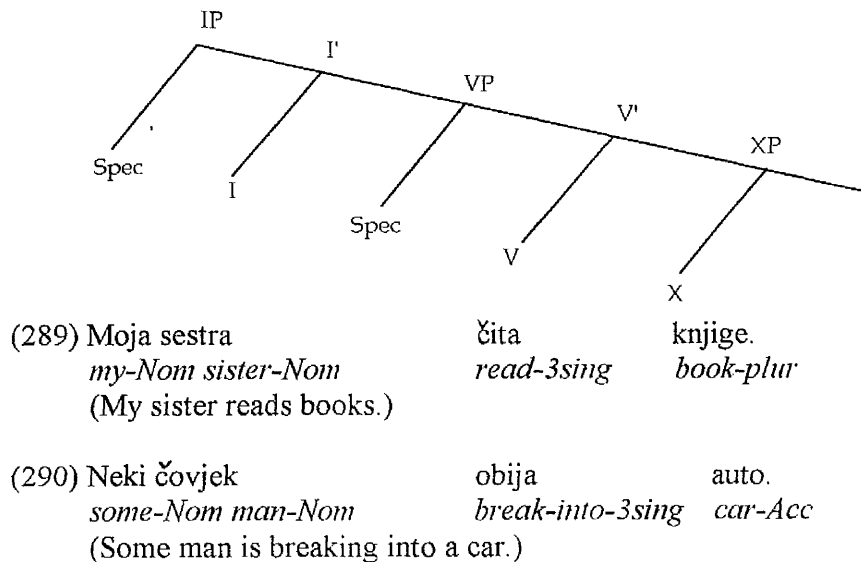
4.1.1. Adverbs

Adverbs that modify verbs tend to precede them while sentence adverbs usually follow them.

Consider the following examples:

```
         IP
        /|\___
       / |    I'_____
      /  |    |   \    AdvP_____
     /   |    |    \   |    \     VP_____
    /    ·    |     \  |     \    |    \    V'_____
   /          |      \ |      \   |     \   |    \       XP____
 Spec         I      Adv        Spec      V      X
```
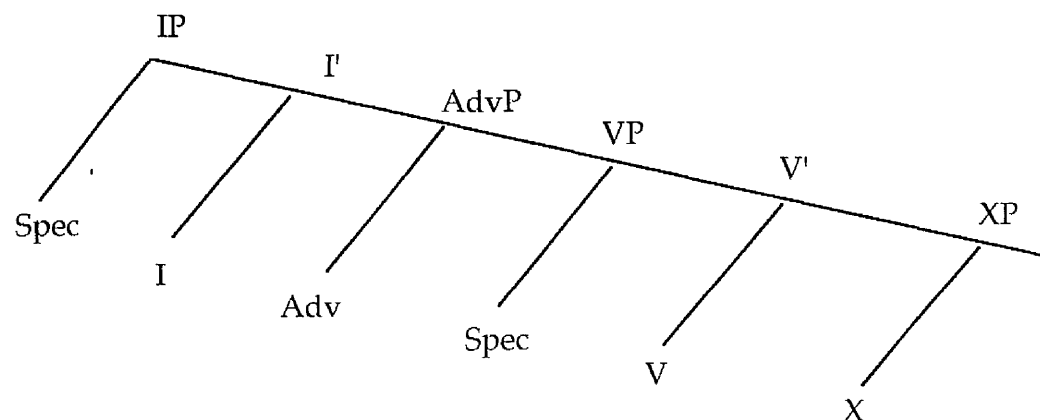
(291) Marija   je   jasno   vidjela   provalnika.
      Maria   is   clearly   seen   the burglar
      (Maria saw burglar clearly.)

(292) Marija   je   zaspala   u kinu.
      Maria   is   fell asleep   in cinema
      (Maria fell asleep in the cinema.)

4.1.1. New information

An answer to a question (questioned constituent) or any new information is generally
placed sentence finally:

(293a) **Who** reads books?

(293b) Knjige   čita   **moja____sestra**.
       book-plur   read-3sing my-Nom sister-Nom
       (**My sister** reads books.)

(294a) **What** does your sister read?

(294b) Moja   sestra   čita   **knjige**.
       my-Nom   sister-Nom   read-3sing book-plur
       (My sister reads **books**.)

(295a) **What** does your sister **do** with the books?

(295b) Moja   sestra   knjige   **čita**.
       my-Nom   sister-Nom   book-plur   read-3sing
       (My sister **reads** books.)

4.1.2. Existential sentences

Despite the basic SVO order, subjects are often found post-verbally, usually in existential sentences. This probably has to do with the subject providing new or emphasized information. These sentences occur in two forms:

(296) <u>time/place + verb + subject</u> Na stolu leži **knjiga**.
on table lies book.
(There lies a book on the table.)

(297) <u>'to have'+ subject</u> U frižideru ima **šunke**.
in fridge has ham
(There is some ham in the fridge.)

In both above cases, the verbs can be replaced by the verb 'to be' and in some dialects only 'to be' is allowed:

(298) Na stolu **je** knjiga.
on table is book.
(There lies a book on the table.)

(299) U frižideru **je** šunka.
in fridge is ham
(There is some ham in the fridge.)

4.1.3. Clitic placement

The clitic form of the verb *biti* '*to be*' belongs to a large group of so-called 'second position clitics', which, due to their phonological properties (no accent) can only appear in the clause second position and must be preceded by overt linguistic material. Clitics can be preceded by more than one word only if these words form a constituent and thus take up one position only. However, even in these cases, clitics usually interfere with the constituent internal structure joining in after the first word of the constituent. Each of the following two sentences is grammatical:

(300) <u>Moj posao</u> **je** veoma naporan.
My job is-clitic very demanding
(My job is very demanding.)

(301) <u>Moj</u> **je** <u>posao</u> veoma naporan.
My is-clitic job very demanding
(My job is very demanding.)

Various syntactic conditions regulate the choice of the appropriate form (full/clitic) whether the clause in question is introduced by a null subject (pro), whether the information contained in this verb is focussed or not, whether this verb is preceded by another word, etc.

5) Relevant morphological facts of the Serbo-Croat language

5.1. Conjugation

Only verbal morphology will be discussed. SC still makes a distinction between athematic (add Person and Number markers directly to the root) and thematic verbs (root extended by a thematic suffix) and keeps the opposition between Present and Infinitive stems.

5.1.1. Thematic verbs

Table 7.49. There were seven regular verb classes in PS, which SC reduced to four:

		Present stem	Inf stem+Inf marker: -ti/-ći
(a) -e-/-e- (mostly verbs whose root ends in consonant)			
-nes-	'to shake'	trese-	tres-ti
	'to bring'	donese-	donije-ti
-t- and -d-	'to lead in'	dovede-	doves-ti
	'to go'	ide-	i-ći
	'to ride'	(lost)	jaha-ti
-p- and -b-	'to scratch'	grebe-	greba-ti
-k- and -g-	'to say'	reče-	re-ći
-n- and -m-	'to start'	počne-	poče-ti
	'to stop'	stane-	sta-ti
-r-	'to die'	umre-	umrije-ti
-ra-	'to pluck'	bere-	bra-ti

(b) -ne-/-ne-			
	'to raise'	digne-	dignu-ti /di-ći
	'to pass'	mine-	minu-ti
	'to sink'	tone-	tonu-ti

(c) -je-/-je- (the -j- appears on the surface or causes old jotation)		
'to hear'	čuje-	ču-ti
'to hide'	krije-	kri-ti
'to slaughter'	kolje-	kla-ti (from *kol-ti)
'to grind'	melje-	mlje-ti (from *mel-ti)
'to know how'	umije-	umje-ti
'to write'	piše-	pisa-ti
'to send'	šalje- (from *slaje)	sla-ti
'to donate'	daruje-	darova-ti
'to say' (imperf.)	kazuje-	kaziva-ti
'to say' (perf.)	kaže- (from *kazje)	kaza-ti
'to giv'e	daje-	da-ti

(d) -i-/-i-

	'to beg'	moli-	moli-ti
	'to see'	vidi-	vidje-ti
	'to hold'	drži-	drža-ti
	'to love'	voli-	volje-ti

5.1.2. Athematic verbs

Recall that Proto-Slavonic had four athematic verbs, all of which, except for *jasti* '*to eat*', had different stems in the Present Finite and the Infinitive (-ti = Infinitive):

Table 7.50.

			Present stem	Infinitive stem		
jestЬ	'he is'	from	*ěs-tǐ	by-ti		'to be'
jastЬ	'he eats'	from	*ēd-tǐ	jas-ti		'to eat'
vestЬ	'he knows'	from	*uŏid-tǐ	vede-ti		'to know'
dastЬ	'he will give'	from	*dâd-tǐ	da-ti		'to give'

Apart from the verb 'to be' they all became regular thematic verbs. The verb 'to be' remains the only athematic verb in Modern Serbo-Croat. Its Present Finite stem is: *jes-* and its Infinitive stem (after deduction of the Infinitive marker -*ti*) is *bi-*. This verb is unusual in the sense that it has a third stem *bude-*, also a Present Finite stem, used in conditional clauses, Imperative, Present adverb and as an Auxiliary for the Future II.

Present Finite stem 1, *jes-*, is Imperfective,
Present Finite stem 2, *bude-*, is bi-aspectual,
Infinitive stem, *bi*, is also bi-aspectual.

5.2. Finite forms

Serbo-Croatian finite forms (three simple: the Present, the Aorist, the Imperfect, and four compound: the Perfect, the Pluperfect, the Future I, the Future II) agree with subjects in Person and Number. Compound forms containing the l-participle also express Gender.

5.2.1. The Present Finite

Only two verbs maintain -*u* in the 1st singular. namely *hoću/ću* '*I will*' and mogu '*I can*'. but this is not a sign of any verb irregularity. as generally assumed, but a result of a series of old Proto-Indo-European and Proto-Slavonic phonological changes described below. The Proto-Slavonic (and probably Proto-Indo-European as well) Present stem of the verb 'to be able' was *mog-*. Recall that the Present Finite in Late Proto-Indo-European was formed by adding the Present Finite marker to the Present Finite stem and then suffixing Person and Number markers. The Present Finite marker was -*oh-* in 1 sing, -*o*-in 3 plur and -*e*- elsewhere. Let us. first. try to reconstruct the Proto-Slavonic Present Finite. 1 sing of this verb:

(302)

the Present stem: *mog-*
the Present Finite marker in the 1 sing: *-oh-* > *o*
the Person and Number suffix: *-mi*

mog+oh+mi: the 1sing marker *-oh-* became long *-o-* in PS:
mog+o+mi: remember that the reflexes of the two Proto-Indo-European *jers*,
-i- and *-u-*, were Ь and ъ respectively. Thus, the Late PIE Person and Number suffix *-mi* survived as *mь* in Proto-Slavonic:
mog+o+m :   in word-final position, *jers* were further reduced in length, resulting in weak *jers*, which were eventually eliminated:
mog+o+m: we also know, from many examples, that PS long vowels used to merge with word-final *-m*, resulting in nasalized vowels:
mog+ı: eventually, PS denasalized all its vowels and nasalized *-ı-* was usually raised to *-u-*:

mog+u

mog+oh+mi > *mog+o+mi* > *mog+o+m_* > *mog+o+m* > *mog+ı* > *mog+u*

As for the verb *htjeti* 'to want', I have been unable to trace its original Present stem, but data from OCS suggests that it was, most probably, *hote-/hotje-*. From what we have learned about the PS phonology, the *-t-* from this stem must have first become *-t'-*, as it is followed by a front vowel/glide. PS *-t'-* had different reflexes in different dialects, and in SC, its reflex was *-ć-*.

(303)

Present stem	>	*hote- hotje*	>	*hot'e*	>	*hoće*
1 sing Present Finite marker	>	*-oh-*	>	*o*		
Person and Number suffix	>	*-mi*	>	*m*	>	*m*

hotje+oh+mi > *hot'+o+mi* > *hot'+o+m_* > *hot'+o+m* > *hot'+ı* > *hot'+u* > *hoć-u*

(304) *spava- (spava-)* 'to sleep'

singular	plural
1. spava+m	*1. spava+mo*
2. spava+š	*2. spava+te*
3. spava+	*3. spava+j+u*

SC does not tolerate two adjacent vowels. They are either forced to merge, or one is dropped, or, like in the 3 plur above, they are separated by an inserted glide. Here, the back vowel *-u-* in the 3 plur suffix has pushed back the stem-final front vowel *-i-* and they have merged into *-e-*.

(305) *trči- (trča-)* 'to run'

singular	plural
1. trči+m	*1. trči+mo*
2. trči+š	*2. trči+te*
3. trči-	*3. trči-u* > *trče*

(306) plače- (plaka-) 'to cry'

singular	plural
1. plače+m	1. plače+mo
2. plače+š	2. plače+te
3. plače+	3. plače+u > plaču

Here, the stem-final vowel and the suffix vowel are too close to merge into a third vowel (Serbo-Croatian vowel system does not contain a vowel which would be more back than -e- and more front than -u-), thus they merge into -u-. In other words, the -e- is dropped. In terms of the Government Phonology, it seems that the vowel on the right always 'governs' the vowel on the left.

5.2.1.1. The Present Finite of the verb biti 'to be':

The verb biti 'to be' can appear in its full or its clitic form. As a general rule, if this verb is focussed or sentence initial it must take the full structure, in any other case the clitic form is used. It has the following Present Finite forms:

(307) jes- (bi-) 'to be'

singular	plural
1. (je)sam	1. (je)smo
2. (je)si	2. (je)ste
3. je(ste)	3. (je)su

Full forms: jesam, jesi, jeste, jesmo, jeste, jesu.
Clitic forms: sam, si, je, smo, ste, su.

It is not immediately obvious where the stem ends and the inflection begins, nor is it possible to even recognize the stem. This verb in the Present Finite has always been regarded as irregular, since its inflection seems to differ from the norm. But, these 'irregularities' can be explained through historical phonological processes. Recall that one of these processes was the introduction of prothesis before syllable-initial vowels in PS. The original Present stem of the verb 'to be' was es- (Inf. stem by). The prothetic -i- eventually became -j-: *es- > *ies- > jes-. The following example shows to what extent the regular Present Finite endings are involved in the Present Finite formation of the verb 'to be':

(308)

singular	1.	+m	jes-m	>	? jes-a-m		
	2.	+š	jes-si	>	je-si	>	jesi
	3.	+	jes-	>	je		
plural	1.	+m	jes-mo				
	2.	+te	jes-te				
	3.	+u	jes-u				

Every language that has a vowel-zero alternation has a preference regarding which vowel is involved in this process. Various evidence confirms that, in SC, this vowel is -a-. The 1 sing above is a typical example of a vowel-zero alternation. Without going into too much detail, an overt vowel is required if the following syllable does not itself contain an overt vowel. (The question mark above stands for an assumption that has not been proven.). The 2 sing suffix above is different from the 2 sing suffix used for other verbs'. This is not surprising if one remembers that this verb is the last athematic verb still preserved in SC. As such, it may be using a version of the PIE athematic type of the Primary Person+Number endings:

Table 7.51.	Primary		Secondary
	Athematic	Thematic	
1sing	*-mi*	*-o*	*-m*
2sing	*-si*	*-ei (?)*	*-s*
3sing	*-ti*		*-t*
3pl	*-nti*		*-nt*

The loss of the final -s- in the 3 sing could have something to do with the Proto-Slavonic loss of all word-final consonants inherited from Proto-Indo-European.

5.2.1.2. The Present Finite of the verb *htjeti* 'to want':

This verb is used either as a MV (in any finite form) or as an AUX (for the Future I Finite). It has full and clitic forms, but whenever it acts as a MV, only the full form is allowed.

On the other hand, in Future I, where it acts as an AUX, it can only have a clitic form. Its origin has already been explained:

hotje+oh+mi > hot'e–o+mi > hot'e–o–m > hot'e+o–m > hot'e+ı > hot'e+u > hoće+u > hoću

(309) *hoc- (htje-)* 'to want'

singular	plural
1. hoće+u W hocu	*1. hoće+mo*
2. hoće+š	*2. hoće+te*
3. hoće+	*3. hoće+u > hoće*

Full forms: *hoću, hoćeš, hoće, hoćemo, hoćete, hoće.*
Clitic forms: *ću, ćeš, će, ćemo, ćete, će.*

Note that, in order to make a distinction between the 1 sing and the 3 plur. the two mergers of the stem-final -e- and the suffix vowel -u- have different results.

5.2.2. The Aorist

Recall that the Late Proto-Slavonic Productive Aorist endings in South Slavonic languages were:

Table 7.52.

1.	*-o-s-o-m*	>	*-o-h-o-m*	>	*-o-h-*	>	*-eh*
2.	*-o-s- s*	>	*-o-s*	>	*-e*	>	*-e*
3.	*-o-s- t*	>	*-o-s*	>	*-e*	>	*-e*
1.	*-o-s-o-mъ*	>	*-o-h-o-m*	>	*-o-h-o-m*	>	*-ehom*
2.	*-o-s- te*	>	*-o-s- te*	>	*-o-s te*	>	*-este*
3.	*-o-s- nt*	>	*-o-s- e*	>	*-o-s e*	>	*-eše*

Remember that *-s-* became *-h-* before a back vowel, that vowels merged with following word-final *-m-* and that most word-final consonants were lost. Modern SC ignores thematic vowels with verbs whose Infinitive stem ends in a vowel. With verbs whose Infinitive stem ends in a consonant, the thematic vowel is *-o-*.

Table 7.53.

	singular		plural
1.	*+h*	*1.*	*+smo*
2.	*+*	*2.*	*+ste*
3.	*+*	*3.*	*+še*

Some examples:

(310) *biti* (*bi+ti*) 'to be'
(as a bi-aspectual verb, it can form both the Aorist and the Imperfect)

singular	plural
1. bi+h	*1. bi+smo*
2. bi+	*2. bi+ste*
3. bi+	*3. bi+še*

(311) *htjeti* (*htje+ti*) 'to want'   (*-do-* = perfective)
(an imperfective verb and one of the rare ones which can be transformed into a perfective by the suffix *-do-* – usually it is a prefix that makes a verb perfective)

singular	plural
1. htje−do+h	*1. htje+do+smo*
2. htje−de+	*2. htje+do+ste*
3. htje−de+	*3. htje−do+še*

(312) *zaspa -ti* 'to fall asleep'

singular	plural
1. zaspa+h	*1. zaspa+smo*
2. zaspa+	*2. zaspa+ste*
3. zaspa+	*3. zaspa+še*

(313) *zamoli+ti* 'to ask'

singular	plural
1. zamoli+h	*1. zamoli+smo*
2. zamoli+	*2. zamoli+ste*
3. zamoli+	*3. zamoli+še*

(314) *tres+ti* 'to shake'

singular	plural
1. tres+o+h	*1. tres−o+smo*
2. tres+o+	*2. tres−o+ste*
3. tres+o+	*3. tres−o+še*

(315) *vu+ci* 'to pull'

singular	plural
1. vuk+o+h	*1. vuk−o+smo*
2. vuk+o+	*2. vuk−o+ste*
3. vuk+o+	*3. vuk−o+še*

5.2.3. The Imperfect

The Proto-Slavonic Imperfect consisted of:
- Infinitive stem,
- Imperfective marker *-ea-* or *-aa*,
- *-s-* from the Sigmatic Aorist,
- thematic vowel: *-e-* before *-s-* and *-t-*, and *-o-* elsewhere, and
- Proto-Indo-European Secondary Person endings.

When compared with Aorist endings, the Imperfect suffixes show how the presence of the thematic vowel prevented the loss of *-s-* in the 2 sing and the 3 sing, or caused the change of *-s-* into *-h-* and of *-o+nt-* to *-u-*, in the 3 plur. Today's Serbo-Croat Imperfect endings are:

Table 7.54.

singular	plural
1. +h	*1. −smo*
2. +še	*2. −ste*
3. −še	*3. −hu*

(316) *biti* (*bi+ti*) 'to be'
(as bi-aspectual verb. it can form both the Aorist and the Imperfect. However, when in the Imperfect. its Aspect has to be specified through the imperfective marker. the suffix - *ja-*)

singular	plural
1. bi−ja−h	*1. bi−ja−smo*
2. bi−ja−še	*2. bi−ja−ste*
3. bi−ja−še	*3. bi−ja−hu*

(317) htjeti (htje+ti) 'to want'
(as an imperfective, this verb can form the Imperfect.)
singular	plural
1. htje+h	*1. htje+smo*
2. htje+še	*2. htje+ste*
3. htje+še	*3. htje+hu*

(318) *spava-ti* 'to sleep'
singular	plural
1. spava+h	*1. spava+smo*
2. spava+še	*2. spava+ste*
3. spava+še	*3. spava+hu*

(319) *trca-ti* 'to run'
singular	plural
1. trča+h	*1. trča+smo*
2. trča+še	*2. trča+ste*
3. trča+še	*3. trča+hu*

(320) *moli-ti* 'to beg'
singular	plural
1. moli+h	*1. moli+smo*
2. molja+še	*2. moli+ste*
3. molja+še	*3. molja+hu*

(321) *mo-ci* 'to be able to'
singular	plural
1. moga+h	*1. moga+smo*
2. moga+še	*2. moga+ste*
3. moga+še	*3. moga+hu*

5.2.4. The Past Finite

The Past Finite consists of:

- the Present Finite form of the verb *biti* 'to be', as AUX:
singular		plural	
1. jesa—m	*(sa+m)*	*1. jes+mo*	*(s+mo)*
2. je—si	*(si)*	*2. jes+te*	*(s+te)*
3. jes+te	*(je+)*	*3. jes+u*	*(s+u)* , and

- the l-participle of MV, inflected for Gender and Number (G-N)
	singular	plural
feminine:	*+a*	*+e*
masculine:	*+o*	*+i*
neuter:	*+o*	*+a.*

Some examples:

(322) *biti* (*bi*+*ti*) 'to be'

singular	plural
1. (je)sam bil+a/ø/o	*1. (je)smo bil+e/i/a*
2. (je)si bil+a/ø/o	*2. (je)ste bil+e/i/a*
3. je(ste) bil+a ø/o	*3. (je)su bil+e i a*

(323) *htjeti* (*htje*+*ti*) 'to want'

singular	plural
1. (je)sam htjel+a/ø o	*1. (je)smo htjel+e/i/a*
2. (je)si htjel+a/ø o	*2. (je)ste htjel+e/i/a*
3. je(ste) htjel+a/ø o	*3. (je)u htjel+e/i/a*

(324) *spava-ti* 'to sleep'

feminine:

singular	plural
1. (je)sam spaval+a	*1. (je)smo spaval+e*
2. (je)si spaval+a	*2. (je)ste spaval+e*
3. je(ste) spaval+a	*3. (je)su spaval+e*

masculine:

singular		plural
1. (je)sam spaval+ >	*spavao*	*1. (je)smo spaval+i*
2. (je)si spaval+ >	*spavao*	*2. (je)ste spaval+i*
3. je(ste) spaval+ >	*spavao*	*3. (je)su spaval+i*

neuter:

singular	plural
1. (je)sam spaval+o	*1. (je)smo spaval+a*
2. (je)si spaval+o	*2. (je)ste spaval+a*
3. je(ste) spaval+o	*3. (je)su spaval+a*

(325) *volje-ti* 'to love'

singular	plural
1. (je)sam voljel+a o/o	*1. (je)smo voljel+e/i/a*
2. (je)si voljel+a o/o	*2. (je)ste voljel+e i/a*
3. je(ste) voljel+a o/o	*3. (je)su voljel+e i/a*

5.2.5. The Pluperfect

The Pluperfect is composed of:

- AUX: Imperfect form of the verb *biti* 'to be'

singular	plural
1. bi-ja-h	*1. bi-ja-smo*
2. bi-ja-še	*2. bi-ja-ste*
3. bi-ja-še	*3. bi-ja-hu, and*

- MV: l-participle of the MV inflected for Gender and Number .

	singular	plural
feminine:	+*a*	+*e*
masculine:	+*o*	+*i*
neuter:	+*o*	+*a*

Since the Past Finite can be used instead of any other past finite form, it can replace the whole Pluperfect (the most preferred option), or it can replace only its Imperfect part, the AUX.

Some examples:

(327) *bi-ti* 'to be'

singular	plural
1. bi−ja−h bil+a/ϕ/o	*1. bi+ja+smo bil−e/i/a*
2. bi−ja−še bil+a/ϕ/o	*2. bi+ja+ste bil−e/i/a*
3. bi−ja−še bil+a/ϕ/o	*3. bi+ja+hu bil−e/i/a*

(328) *htjeti (htje+ti)* 'to want'

singular	plural
1. bi−ja−h htjel+a/ϕ/o	*1. bi+ja+smo htjel+e i/a*
2. bi−ja−še htjel+a/ϕ/o	*2. bi+ja+ste htjel+e i/a*
3. bi−ja−še htjel+a/ϕ/o	*3. bi+ja+hu htjel+e i/a*

(329) *spava-ti* 'to sleep'

singular	plural
1. bi−ja−h spaval+a/ϕ/o	*1. bi+ja+smo spaval/spava −e i a*
2. bi−ja−še spaval+a/ϕ/o	*2. bi+ja+ste spaval spava +e i a*
3. bi−ja−še spaval+a/ϕ/o	*3. bi+ja+hu spaval/spava −e i a*

(330) *trča-ti* 'to run'

singular	plural
1. bi−ja−h trčal+a/ϕ/o	*1. bi+ja+smo trčal−e/i/a*
2. bi−ja−še trčal+a/ϕ/o	*2. bi+ja+ste trčal−e/i/a*
3. bi−ja−še trčal+a/ϕ/o	*3. bi+ja+hu trčal−e/i/a*

(331) *plaka-ti* 'to cry'

singular	plural
1. bi−ja−h plakal+a/ϕ o	*1. bi+ja+smo plakal−e/i a*
2. bi−ja−še plakal−a/ϕ o	*2. bi+ja+ste plakal−e i a*
3. bi−ja−še plakal−a/ϕ o	*3. bi+ja+hu plakal−e i a*

5.2.6. The Future I Finite

The Future Finite is formed of
- the Present Finite forms of the verb *htjeti* 'to want'
(as the AUX)

	singular	plural
1.	*ću*	1. *ćemo*
2.	*ćeš*	2. *ćete*
3.	*će*	3. *će*, and

- the Infinitive of the MV.
(with the Infinitive marker *–ti)*

Some examples:

(332) *bi-ti* 'to be'

singular		plural	
1. *ću*	*bi+ti*	1. *ćemo*	*bi–ti*
2. *ćeš*	*bi–ti*	2. *ćete*	*bi–ti*
3. *će*	*bi–ti*	3. *će*	*bi–ti*

(333) *htje-ti* 'to want'

singular		plural	
1. *ću*	*htje+ti*	1. *ćemo*	*htje–ti*
2. *ćeš*	*htje÷ti*	2. *ćete*	*htje–ti*
3. *će*	*htje+ti*	3. *će*	*htje–ti*

(334) *spava-ti* 'to sleep'

singular		plural	
1. *ću*	*spava+ti*	1. *ćemo*	*spava–ti*
2. *ćeš*	*spava+ti*	2. *ćete*	*spava÷ti*
3. *će*	*spava+ti*	3. *će*	*spava–ti*

(335) *trča-ti* 'to run'

singular		plural	
1. *ću*	*trča+ti*	1. *ćemo*	*trča–ti*
2. *ćeš*	*trča–ti*	2. *ćete*	*trča–ti*
3. *će*	*trča÷ti*	3. *će*	*trča–ti*

(336) *plaka-ti* 'to cry'

singular		plural	
1. *ću*	plaka+ti	1. *ćemo*	plaka+ti
2. *ćeš*	plaka+ti	2. *ćete*	plaka+ti
3. *će*	plaka+ti	3. *će*	plaka+ti

5.2.7. The Future II Finite (the Present Conditional)

The Future II Finite is formed of the Present Finite forms of perfective verbs only Imperfective verbs have to be accompanied by the AUX - the Present Finite form of the perfective version of the verb *bude-* 'to be'

The main verb now has the l-participle form and it is inflected for Gender and Number .

5.2.7.1. The Future II of perfective verbs:

(337) *zaspa-ti* 'to fall asleep'
sing	plur
1. zaspe+m	*1. zaspe+mo*
2. zaspe+š	*2. zaspe+te*
3. zaspe+	*3. zasp+u*

(338) *pročita-ti* 'to read'
sing	plur
1. pročita+m	*1. pročita–mo*
2. pročita+š	*2. pročita–te*
3. pročita+	*3. pročita–j+u*

(339) *zaboravi-ti* 'to forget'
sing	plur
1. zaboravi+m	*1. zaboravi–mo*
2. zaboravi+š	*2. zaboravi+te*
3. zaboravi+	*3. zaborave (i+u > e)*

5.2.7.2. Future II of imperfective verbs:

(340) *bi-ti* 'to be'
sing	plur
1. budem bil+a ∅ o	*1. budemo bil+e i a*
2. budeš bil+a/∅ o	*2. budete bil+e i a*
3. bude bil+a ∅ o	*3. budu bil+e i a*

(341) *htje-ti* 'to want'
sing	plur
1. budem htjel+a ∅/o	*1. budemo htjel–e i a*
2. budeš htjel–a ∅/o	*2. budete htjel–e i a*
3. bude htjel–a ∅/o	*3. budu htjel–e i a*

(342) *zaspa-ti* 'to fall asleep'
sing	plur
1. budem spaval–a/∅ o	*1. budemo spaval–e i a*
2. budeš spaval–a/∅ o	*2. budete spaval–e i a*
3. bude spaval–a/∅ o	*3. budu spaval–e i a*

(343) *čita-ti* 'to read'
sing	plur
1. budem čital–a ∅ o	*1. budemo čital–e i a*
2. budeš čital–a ∅ o	*2. budete čital–e i a*
3. bude čital–a ∅ o	*3. budu čital–e i a*

Perfective verbs may have either of the two forms. Compare the above form of the perfective verb *zaboravi-ti* 'to forget'with the following one:

(344) *zaboravi-ti* 'to forget'

sing	plur
1. budem zaboravil+a/ф/o	*1. budemo zaboravil+e/i·a*
2. budeš zaboravil+a/ф/o	*2. budete zaboravil+e/i/a*
3. bude zaboravil+a/ф/o	*3. budu zaboravil–e i/a*

5.2.6. The Past Conditional

The Past Conditional Finite is a three-element finite form, composed of:
- the Present Conditional form of the verb *biti* 'to be', as the AUX, and
- the l-participle of the MV, inflected for Gender and Number.

The Past Conditional Finite is used in conditional clauses to express an unfulfilled past possibility:

(345) *If the weather had been nice, I would have gone out....*

(346) *zaboraviti* 'to forget':

singular	plural
1. bih bil+a/bio/o zaboravil+a/zaboravio. o	*1. bismo b il+a bio o zaboravil–e i a*
2. bi bil+a/bio/o zaboravil+a/zaboravio/o	*2. biste bil+a bio o zaboravil–e i·a*
3. bi bil+a/bio/o zaboravil+a/zaboravio/o	*3. biše bil+a bio o zaboravil–e i. a*

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