

## FORMATIVE-SEMANTIC MODELS OF ADJECTIVE COMPOUNDS IN ENGLISH AND SERBIAN\*

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The paper is a comparative-contrastive analysis of the models or patterns of adjective compound formation in English and Serbian, two typologically different languages. As any sustainable attempt to establish similarities and differences between the two languages regarding lexeme formation processes would not be possible if one relied solely on the surface formal features of compounds, the comparison has been drawn between formative-semantic models of adjective compounds based on the internal relations within their underlying structure. The contrasting procedure has been performed on 32 different models established in English and 19 in Serbian. The entire idea is founded upon the assumption that compound lexical constructs are interpretable in terms of reduced clauses (in this particular instance, adjectival clauses), an approach that could be traced back to the works of Lees, Ljung, Chomsky, Lieber, and others.

Keywords: compound adjectives, formation patterns, English, Serbian

## СЛОВООБРАЗОВАТЕЛЬНО-СЕМАНТИЧЕСКИЕ МОДЕЛИ СЛОЖНЫХ ПРИЛАГАТЕЛЬНЫХ В АНГЛИЙСКОМ И СЕРБСКОМ ЯЗЫКАХ

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В настоящей работе представлен сопоставительно-контрастивный анализ словообразовательных моделей сложных прилагательных в типологически несходных английском и сербском языках. Так как попытка установления сходств и различий между ними на основании характеристик исключительно поверхностной структуры сложных слов оказалась бы бесплодной, сопоставление основывалось на формировании особых словообразовательно-семантических моделей сложных прилагательных и их глубинных структур. Контрастивная процедура и результаты контрастивного анализа базируются на 32 разных моделях, которые можно установить в аналитическом английском языке, и 19 в синтетическом сербском языке. Идея о сопоставлении образцов основана на предположении, что сложные лексические образования можно интерпретировать с помощью придаточных предложений без союзов, то есть с опущенными союзами (в данном случае с помощью придаточных определительных предложений, в которых опускаются относительные местоимения); подобный подход встречается в работах некоторых исследователей.

**Ключевые слова:** английский, сербский, словообразовательные образцы, сложные прилагательные, тематические роли

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## 1. Introduction

The present paper reports on a comparative-contrastive analysis of the formative models that could be established within the domain of adjective composition in English and Serbian. The lexeme formation process of compounding in English as a root language is different from the same process in Serbian or any other of the synthetic languages like Russian or Slovak, for that matter.<sup>1</sup> Moreover, as Fabb [1998: 66] put it, “there are many possible semantic relations between the parts in a compound, as between the parts in a sentence, but unlike a sentence, in a compound, case, prepositions and structural position are not available to clarify the semantic relation”. Booij [2009: 322] formulated the same general trait as:

- (1)  $[[a]X [b]Y]Y$  ‘Yi with relation R to X’

Since it would not be possible to establish any relevant similarities or differences between the two languages in the form of compounds as they appear on surface due to the accompanying process of derivation, among other reasons, the comparison has to be performed on the basis of adjective compound formative-semantic models particularly formulated within this research. This means that the contrasting of the languages upon their lexeme forming potentials is to be undertaken at a more basic level, before the process of lexicalisation takes place.<sup>2</sup>

The paper tries to provide arguments in favour of the idea that the syntactic component should not be altogether dismissed and eliminated in lexeme formation. Even though a clear distinction between morphology and syntax should be maintained, and these two are to be kept apart as two separate levels of language organization, cf. most notably by Ackema and Neeleman [2004; 2007], Borer [1989], and Selkirk [1982], the domain of lexical compounding and compound adjective formation in particular may be taken as a point of interface of the two. Among other things, syntax can be viewed as providing input for lexeme formation, the fact can be vouched for by a number of lexical formations such as *get-at-able*, *unputdownable*, *a has-been*, *all-too-common*, *whatshisname*, etc., many of which are counter-examples to Rudolf Botha’s [1983] **No-Phrase Constraint**. Moreover, in certain domains of lexeme composition syntax appears to be an indispensable framework for both formal analysis and meaning interpretation. For instance, the English compound *card-carrying* could be interpreted literally, namely ‘one who carries a card’, on the grounds of the meanings encoded in the parts of the compound. However, it seems that only after immersing the lexeme in an appropriate sentential context would the full and adequate meaning of the item be unfolded. The head noun *member* or *Democrat* considerably contributes to the correct or precise understanding of the preceding compound with modifying function. By the same token, the compound *air-minded* as such might be understood as a word referring to a person with certain mental properties (cf. *narrow-minded*, *absent-minded*, etc.), but it is through establishing a concrete semantic interpretation and inherent relations among the syntactic and semantic roles of its elements, both expressed and unexpressed, that the exact semantic structure of this word could be determined, i.e. a person who is dedicated to flying, whose ‘mind is in the air’. The same could apply to *cloth-eared* which by no means is interpretable in similar terms as another compound of the same surface structure, e.g. *rabbit-eared*.

The aim of the study is to attempt at providing a consistent explanation of the ways adjective compounds are formed based on the syntactic structures that may be considered as adequate adjective compound “nurseries” and applied to both English and Serbian compounds. Starting

<sup>1</sup> In the “Oxford handbook of compounding”, it is stated that in “inflectional languages like Czech, Slovak, or Russian, the individual constituents of syntactic phrases are inflected. Compounds result from the combination not of words, but stems — uninflected parts of independent words that do not themselves constitute independent words” [Lieber, Štekauer 2009: 5].

<sup>2</sup> Lexicalisation is understood here in terms presented by Lehmann [2002] and interpreted by Brinton and Traugott [2005: 21] as “‘a process in which something becomes lexical’ in the sense of entering the inventory and becoming holistic”.

from some of the earliest assumptions such as “what is traditionally referred to as derivation can be, and ought to be, integrated with the syntactic rules of English” [Lyons 1968: 196], to the more recent ones as “the meaning is non-compositional: the meaning of the word-form is more than the sum of the meanings of the parts” [Haspelmath, Sims 2010: 50], the analysis of English and Serbian compound adjective formation has been effected here through the interpretation of adjective compounds via the underlying syntactic structures that could be postulated. Having in mind the fact that compounds such as *tongue-tied* are not easily semantically explained and not readily comparable with others, e.g. *rat-infested*, the approach presented here may allow for making a wider-scope generalisation about the ways compound adjectives are formed and understood across languages. As opposed to other approaches which accounted for composition on the grounds of compound-building rules and phrase structure origin [Roeper, Siegel 1978; Spencer 1991; Roeper 1999], the approach presented here goes along the lines of those that look for explanations within the widest lexeme-formative context, i.e. clausal structure. The paper is meant to offer a fairly complete structural description of English and Serbian adjective compounds regarding the number and types of formative patterns in an attempt to account for the adjectivisation processes by adhering to the Generative linguistic view in its most rudimentary form (assuming simple active affirmative declarative syntactic structures at the underlying level), as presented in Chomsky [1957]. Even though compounding has been fairly treated in the domain of nominal compounds, there seems to exist a gap in the literature when it comes to adjectival compounds other than synthetic ones.

To make the comparison between the two typologically different languages more conspicuous, the following sections present two sets of adjective compound formation models; first, those that could be considered common in the two languages, and then the ones that make the difference. Although examples taken as representative for each model may not be the same in English and Serbian, the structural matrix they stem from can be looked at as shared, judging by the semantic roles and the formation pattern. This is the reason why the Serbian semantic counterpart *slobodoljubiv* ‘one who loves freedom’ has not been selected as a corresponding example for the English compound *freedom-loving*. What we are more interested in here are the moulds in which different adjective compounds are cast, not necessarily incorporating the same meaning, so that it may be claimed that the tertium comparationis in this contrastive study would be the underlying structural identity of the compounds in the two languages, rather than their semantic concordance. It should be noted that the analysis has been performed by taking into consideration only the primary, denotative meaning of the compounds, and that the models have been formed involving structural elements in their primary meaning. The compound adjectives considered in this research involve native compounds, excluding neo-classical, combining-form-based compounds, so that only right-headed compounds and those headed by adjectival words according to the idea presented by Selkirk [1982: 20] were taken into account.<sup>3</sup>

This approach presupposes the existence of an underlying clausal matrix where a compound base is formed and the affixation stage that occurs before the phonological component and the surface compound form is manifested.<sup>4</sup> The entire idea is founded upon the assumption that adjective compounds as lexical constructs are interpretable in terms of reduced clauses (in this particular instance, adjectival clauses), an approach that can be traced back to the works of Lees [1963] and Ljung [1970] primarily, but also other authors, in combination with a modified version of the so-called Reductionist principle proposed by Matthews, according to whom “it is within transformational syntax that the integration of the lexicon has proved particularly attractive” [Matthews 1974: 175]. The ideas of clausal origin of compounds and lexical transformations have been exposed to criticism in literature, most notably by Allen [1978] and Selkirk [1982]. However, the scope of the overview in this study is much wider than that of Allen’s and Selkirk’s criticism of the ideas

<sup>3</sup> For the notion of right-headedness of English compounds, see [Di Sciullo, Williams 1987].

<sup>4</sup> For a more comprehensive view on the early treatments of compounding within the Generative framework, see [Ten Hacken 2009].

proposed by Roeper and Siegel [1978] and in contrastive considerations like the present one, the concept of sentential context as the source of word-formation may prove to be a useful starting assumption [Beard 1995]. The objections by Selkirk [1982: 45] include the inability of transformations to directly map syntactic representations to sub-categorisation frames. Naturally, there could be no **direct mapping**, but obviously there could be other alternatives to envisage such as reduction operations, which take into account the full potential of the human productive language ability across different layers of language organization. Further on, the models presented here do not entail any actual words but may be taken as abstractions, the concrete lexical expressions depend on many communicative factors. Finally, the approach presented in this paper helped in providing a clear statement that verbs are not possible as first elements of verbal, i.e. synthetic compounds in English, which was the second major criticism by Selkirk [1982: 46]. Apparently, this statement may be expanded to all compound adjectives, as it proved to be correct in the analysis undertaken. However, this may not be considered as utterly true of the Serbian language, as it will be understood from the discussion provided in 2.1, model 10.

The models presented in this proposal are viewed as deep phrasal structures with clausal post-nominal modification, whose development into lexical structures passes through several stages [Jovanović 2013]. Each nominal entity in the matrix clausal structure is assigned a semantic role or thematic relation in accordance with the action or state expressed by the verb [Jackendoff 1983]. Moreover, with the models where no nominal elements are postulated, the semantic roles of the head elements are also designated in accordance with the expressed meaning-function relation. Structural constituents are viewed as prototypical units, in accordance with the idea that lexical categories or word classes are to be regarded not as categories of particular languages but rather as typological prototypes on which speakers draw in constructing a grammatical structure, as suggested by Croft [2001]. In order to facilitate the understanding of the underlying processes in forming the semantic frame of a group of compounds, certain functional as well as empty categories are counted on. At this point, it is important to ascertain the significance of each and every symbol employed in the process of defining the models. To formulate the formative-semantic models, traditional labelling is employed, see Abbreviations. Bringing together the formation models of English and Serbian adjective compounds for comparison, we claim that a common formative core for adjective compounds can be determined for English and Serbian. Since the same models could certainly be implemented to analyse other languages from the two branches of the Indo-European family, there is enough grounds to believe that the common core of formative patterns that this study resulted in may be regarded as a part of the general capacity to produce compound lexical units.

The overview of English adjective compounds and their surface semantic-formative qualities is based on the contributions in the traditional literature and the works by Jespersen [1962], Marchand [1969], Adams [1973], Bauer [1983], Matthews [1991], Carstairs-McCarthy [2002], and Plag [2003], while the main theoretical approach is largely based on the treatments by Roeper and Siegel [1978], Lieber [1992], Emonds [2002], and Ackema and Neeleman [2004]. Serbian examples and their consideration relies on the descriptions by Stanojčić et al. [1989], Stevanović [1991], and Klajn [2002].

The research corpus consists of two lists of compound lexical items, the Serbian comprising 932 instances collected from [Vujanić et al. 2007; Stanojčić et al. 1989; Stevanović 1991; Klajn 2002], while the English list contains 734 of the most frequent examples of adjective compounds from [Adams 1973; Bauer 1983; Plag 2003; Simpson, Weiner 2009] as well as other sources.

## 2. Adjective compounds in English and Serbian

It is established in the presented analysis that English adjective compounds could be formed according to 32 different models that yield lexemes with specific structural and semantic characteristics, some of which are related and form a formative cluster and some of which are quite separate. Applying the same method to the Serbian language revealed the potential of producing

compounds according to 19 patterns. Having these numbers in mind, one could conclude that the adjective compound composition process in these languages is considerably different. Almost a 60% preponderance in the number of models in English as compared to that in Serbian indicates that there must be, among other things, a significant difference in the basic motivation for building compound adjective lexical structures. One interpretation could be that the Serbian language, due to its developed inflection system and a wide array of grammatical affixes, does not rely on compounding lexical structure in attributive positions but in the majority of the cases would preferably retain a syntagmatic construction.

The following segment of text provides a presentation of the formative models, taking into consideration the contrastive outcome. The first group is the common core of English and Serbian, while the following two regard the English and Serbian specificities, respectively. The model examples have been verified in the "Oxford English dictionary" [Simpson, Weiner 2009] and "Rečnik srpskohrvatskoga književnog jezika" [Stevanović et al. 1990], "Rečnik srpskoga jezika" [Vujanić et al. 2007], and "Tvorba reči u savremenom srpskom jeziku" [Klajn 2002].

## 2.1. Formative-semantic models of adjective compounds in English and Serbian: Correspondences

The overall number of determined models amounts to 34. With regard to the number of models that are found in the intersection of English and Serbian, it could be inferred that 17 of the established models are shared by the two languages. The largest number of concurrent models is the one concerning those "fronted" by nouns, i.e. those that have nouns as constituents in the compound whose thematic role in the matrix clause is most often THEME/PATIENT. Five combinations involving nouns include potential relations to other nouns, verbs, and adjectives.

MODEL 1. In the first model postulated for both English and Serbian, two nominal bases are combined into a compound item stemming from two noun lexemes of an original relative clause, formally disregarding the comparative element. The subject noun is manifested in the compound as the second element. The adjectival nature of this lexical match is obtained through further derivation, in Serbian by the zero suffix and in English by the possessive *-ed* suffix.<sup>5</sup> The comparison relation is established on the second nominal entity  $N_2$  and any of the inherent, defining qualities of  $N_2$  such as Eng. *light*, *unsubstantial*, etc., or Serb. *brz* 'fast', *silovit* 'powerful', etc. as in the comparison phrases *as light as a feather* or *brz kao vetar* 'as fast as the wind'. The quality is not lexically manifested in the compound structure but is only implicit, based on the intrinsic characteristics of the  $N_2$  argument. The Serbian composition normally involves the null suffix, as in *svil-o-kos* (silk-INTF-hair-Ø) 'silky-haired' and the elimination of the theme vowel *-a* in *kos-a* 'hair'.

(2) BENCHMARK <i>a feather-headed boxer : vetronog trkač</i>							
$N_m$	[WH <sub>case</sub> ]	$N_1$	V <sub>cop</sub>	[CMPR]	Adj	[CMPR]	$N_2$
<i>boxer</i>	<i>whose</i>	<i>head</i>	<i>be</i>	<i>as</i>	<i>as</i>	<i>feather</i>	
<i>trkač</i>	<i>čija</i>	<i>noga</i>	<i>biti</i>	<i>toliko</i>	—	<i>kao</i>	<i>vetar</i>
<i>runner</i>	<i>whose</i>	<i>leg</i>	<i>be</i>	<i>as</i>	—	<i>as</i>	<i>wind</i>

The English compounds lack an interfix, e.g. *almond-eyed*, *night-scented*, *pea-brained*, *pin-striped*, *razor-clawed*, *saw-toothed*, *silk-tailed*, *stick-legged*, *straw-haired*, *web-footed*, etc., whereas the Serbian ones use an interfix or a linking vowel: *band-o-glav* (pumpkin-INTF-head-Ø),<sup>6</sup> *buć-o-glav* (pumpkin-INTF-head-Ø) [Klajn 2002: 77], *sablj-o-zub* (sabre-INTF-tooth-Ø), *srebr-o-glas-an* (silver-INTF-voice-DAF), *srebr-o-glav* (silver-INTF-head-Ø), *srebr-o-list* (silver-INTF-leaf-Ø), *svil-o-rep* (silk-INTF-tail-Ø), *svil-o-run* (silk-INTF-fleece-Ø), *vil-o-rog* (pitchfork-INTF-horn-Ø), *zmij-o-kos* (snake-INTF-hair-Ø), etc.

<sup>5</sup> This nomenclature for suffixes has been offered by Rutherford [1998].

<sup>6</sup> The first element is supposedly nominal as it is etimologically related to the concepts of *bundeva* 'pumpkin' or *badnjak* 'wood', according to Loma et al. (eds.) [2006: 157].

MODEL 2. This model is not very prominent as it does not yield many examples of compound lexemes in either of the languages, but a parallel valid in terms of semantic and matrix clause structure could be drawn. As opposed to the attitude presented in [Kürchner 1974: 103—105] that different but related deep structures underlie the compound and the pertinent relative clause, the present approach is based on the existence of one and the same clausal matrix for both. This model is the only one where two case markers could be posited for the arguments linked by metaphorical comparison. The reason for this is that the relatedness here is based on one very typical feature of the nominal entity in  $N_2$ , which frequently, but not invariably so, comes from the fauna kingdom in both languages.

(3) BENCHMARK <i>a wasp-waisted brunette : konjoglav poštar</i>						
$N_m$	[WH <sub>case</sub> ]	$N_1$	$V_{cop}$	[CMPR]	$N_{2case}$	$N_1$
<i>brunette</i>	<i>whose</i>	<i>waist</i>	<i>be</i>	<i>as</i>	<i>wasp</i>	<i>waist</i>
<i>poštar</i>	<i>čija</i>	<i>glava</i>	<i>biti</i>	<i>kao</i>	<i>konj</i>	<i>glava</i>
<i>postman</i>	<i>whose</i>	<i>head</i>	<i>be</i>	<i>as</i>	<i>horse</i>	<i>head</i>

English examples: *hare-brained*, *eagle-eyed*, *bull-mouthed*, *pig-headed*, *chicken-hearted*, *lynx-eyed*, *bull-necked*, *pigeon-toed*, etc. The Serbian ones are less frequent: *drv-o-lik* (tree-INTF-shape-Ø), *jaj-o-lik* (egg-INTF-shape-Ø), *koz-o-nog* (goat-INTF-leg-Ø), *koz-o-rog* (goat-INTF-horn-Ø), *krav-o-ok* (cow-INTF-eye-Ø), *vol-o-ok* (ox-INTF-eye-Ø), *zmij-o-lik* (snake-INTF-shape-Ø), *zvezd-o-lik* (star-INTF-shape-Ø), *zvon-o-lik* (bell-INTF-shape-Ø), *žab-o-lik* (frog-INTF-shape-Ø), etc.

MODEL 3. This model is the last of the three formation models where a noun surfaces as the first constituent of the compound. As with the previous models, the relation between the elements involved here is that of comparison, but the nominal entity serves only as the parameter of analogy, whereas the quality is expressed by the second element of the adjective compound. The fact that the entire comparative phrase does not reach the phonological component is accounted for by the **No-phrase constraint** of root compounds introduced by Botha [1981: 18], which disallows for compound structures patterning \*[N [AP *black as coal*] *bird*]. The constraint may be accepted as effective in patterns of this kind, even though it appears to have been flouted in the examples of phrasal compounds representing lexicalized phrases such as *dark-as-night rider*, *black-as-knight coat enhancer* and similar formations. The Serbian language does not involve any additional derivational suffix, as can be seen in *vod-o-rav-an* (water-INTF-level-DAF) ‘horizontal’.

(4) BENCHMARK <i>lemon-yellow dress : perolak bokser</i>						
$N_m$	[WH]	$V_{cop}$	Adj <sub>i</sub>	[CMPR]	N	$V_{cop}$ Adj <sub>i</sub>
<i>dress</i>	<i>which</i>	<i>be</i>	<i>yellow</i>	<i>as</i>	<i>lemon</i>	<i>be yellow</i>
<i>bokser</i>	<i>koji</i>	<i>biti</i>	<i>lak</i>	<i>koliko</i>	<i>pero</i>	<i>biti lako</i>
<i>boxer</i>	<i>who</i>	<i>be</i>	<i>light</i>	<i>as</i>	<i>feather</i>	<i>be light</i>

English examples would be: *ash-blond*, *blood-red*, *bottle-green*, *crystal clear*, *dirt cheap*, *fire-hot*, *grass-green*, *ice-cold*, *milk-white*, *nut-brown*, *pearl-grey*, *paper-thin*, *pitch-dark*, *rock-steady*, *sky-blue*, *stone cold*. Although it has a derived second element, the compound *dog-tired* may be also classified here. The Serbian compounds include: *grom-o-glas-an* (thunder-INTF-loud-DAF), *srebr-o-sjaj-an* (silver-INTF-shine-DAF), etc. The first element may have an adjective form in Serbian, as in *olov-n-o-siv* (lead-DAF-INTF-grey), *vošt-an-o-bled* (wax-DAF-INTF-pale), *sumpor-n-o-zelen* (sulphur-DAF-INTF-green), *ulj-an-o-žut* (oil-DAF-INTF-yellow), *čelič-n-o-plav* (lead-DAF-INTF-grey), and *pepelj-av-o-siv* (ash-DAF-INTF-grey).

MODEL 4. With the fourth model, which is probably one of the most widespread models in both analytic and synthetic Indo-European languages, the composition process involves a compound base formation out of matrix clause elements where the nominal object (argument) is proposed to the predicate. The adjectival nature of the overall structure is obtained through concomitant suffixation. This is probably the model with the simplest underlying structure, along with models 11 and 15, and the only noun-initial model that is based on a verb form other than the copula in the matrix. The most productive bases in Serbian seem to be the verbs *davati* ‘to give’,

*nositi* ‘to bring’ and *tvoriti* ‘to make’, as in *med-o-nos-an* (honey-INTF-bring-DAF) ‘melliferous’, each with 5 to 9 established compounds. The derivational expansion involves the adjective-forming suffixes *-an* in *zakon-o-dav-an* (law-INTF-give-DAF) ‘law-giving’ and *-iv/-ljiv* as in *slobod-o-ljub-iv* (freedom-INTF-love-DAF) ‘freedom-loving’ and *-Ø-* in *zl-o-slut* (evil-INTF-portend-Ø) ‘foreboding’.

- (5) THEME/PATIENT *freedom-loving person : savetodavan organ*
- | N <sub>m</sub> | [WH]         | V             | N              |
|----------------|--------------|---------------|----------------|
| <i>person</i>  | <i>who</i>   | <i>love</i>   | <i>freedom</i> |
| <i>organ</i>   | <i>koi</i>   | <i>davati</i> | <i>savet</i>   |
| <i>body</i>    | <i>which</i> | <i>give</i>   | <i>counsel</i> |

The list of English compounds is long, e.g.: *adverb-forming*, *breath-taking*, *class-changing*, *death-defying*, *god-fearing*, *hair-splitting*, *law-enforcing*, *life-giving*, *money-lending*, *time-consuming*, etc; in Serbian the examples include: *grad-o-nos-ni* (hail-INTF-bring-DAF), *led-o-lom-an* (ice-INTF-break-DAF), *naft-o-nos-ni* (oil-INTF-bring-DAF), *pobed-o-nos-an* (victory-INTF-bring-DAF), *pravd-o-ljub-iv* (justice-INTF-love-DAF), *smrt-o-nos-an* (death-INTF-bring-DAF), *src-e-paraju-ći* (heart-INTF-tear-DAF), *vin-o-rod-an* (wine-INTF-produce-DAF), *žit-o-rod-ni* (wheat-INTF-produce-DAF), *život-o-dav-an* (life-INTF-give-DAF) and others. Klajn [2002: 79] also lists compounds based on *-bolan* as the second element, presuming that the source is the verb *boleti* ‘to ache’ rather than the adjective *bolan* ‘hurtful’: *glav-o-bol-an* (head-INTF-ache-DAF) and *vrat-o-bol-an* (neck-INTF-ache-DAF). Both Vujanić et al. [2007] and Klajn [2002] regard compound adjectives *duš-o-mor-an* as interpretable in terms of the clause *koi mori dušu* ‘who/which tortures the soul’, but *ljub-o-mor-an*, cf. *koga mori ljubav* ‘who is tortured by love’, should not be included here due to obvious case differences of the implied subjective element.

As with the other models, the question of element ordering within the compound seems to be of considerable importance. In an attempt to provide an explanation of the morphology-syntax distinction through noun-compounding and what he calls “the *pig-hunter* question”, Carstairs-McCarthy [2010] takes into consideration Lieber’s **Argument-Linking Principle** by which the difference in sequencing of the predicate and its argument in compounds and clauses is to be accounted for. “Why does *pig* precede *hunt* in *pig-hunter* but follow it in *They hunt pigs*?” [Carstairs-McCarthy 2010: 26]. Lieber’s [1983] argument for synthetic compounds of this X V type is that the position of the non-head element X has to be occupied by the internal argument of the verbal element V. Perhaps it may be added here that the argument linking apparently occurs for the purposes of de-categorization of the argument element, as categorically marked elements (either for number or case, e.g. *pigs* > *pig*) would generally become devoid of inflectional marks after raising [Ackema, Neeleman 2004: 24] once they assume the compound initial position, as presented in (6). This operation, governed by what certain authors call “topicalisation rules” [Brekke 1970], may be semantically restricted when a particular meaning is to be maintained and another warded off, as in *ladies’ man* vs. *lady man*.

- (6) N<sub>1</sub> [[V] [N<sub>2</sub>-IAF]] → [[N<sub>2</sub>-V]-DAF]

Illustrations are numerous: *ant-eating*, *book-binding*, *decision-making*, *eye-opening*, *head-hunting*, *problem-solving*, *tea-drinking*, etc.

MODEL 5. The pattern that is shared in the two languages based on a lexical verb implies a prepositional structure following the verb, an adjunct whose prepositional part does not surface. This model appears to be in conflict with Roeper and Siegel’s [1978] **First Sister Principle** (2.2.1, models 27—29), but the interpretation that would entail *\*to abide law* is not acceptable. The English compound normally has a participial second constituent, as in *freedom-fighting*, while the Serbian one has a derived form based on the suffix *-an*, as in *duš-e-briž-an* (soul-INTF-care-DAF) ‘caring for the souls of others’. The interpretation of the Serbian example is based on the explanation of the adjective compound *bogohulan* in the dictionary “Rečnik srpskoga jezika” [Vujanić et al. 2007].

(7)	SOURCE/LOCATION/TARGET				<i>law-abiding citizen : bogohulan čovek</i>
	<b>N<sub>m</sub></b>	<b>[WH]</b>	<b>V</b>	<b>[PREP]</b>	<b>N</b>
	<i>citizen</i>	<i>who</i>	<i>abide</i>	<i>by</i>	<i>law</i>
	<i>čovek</i>	<i>koji</i>	<i>huli</i>	<i>na</i>	<i>boga</i>
	<i>man</i>	<i>who</i>	<i>blaspheme</i>	<i>at</i>	<i>god</i>

Other examples to illustrate this model include: *day-flying*, *earth-wandering*, *glass-gazing*, *night-blooming*, *night-flying*, *ocean-going*, *picture-going*, *sea-going*, *summer-flowering*, *wind-waving*, etc. The corresponding words from the Serbian language are: *basn-o-slov-an* (fable-INTF-know-DAF), *blag-o-naklo-na* (good-INTF-incline-DAF), *neb-o-lom-an* (sky-INTF-break-DAF) ‘which breaks to the sky’, *zim-o-grož-ljiv* (cold-INTF-abhor-DAF), *zl-o-slut-an* (evil-INTF-portend-DAF), etc.

MODEL 6. The sixth model present in both Serbian and English is closely related in form to model 4, as both of them are initialised by nominal elements. As opposed to the previous one, this model entails an un-surfaced causative verb and the existence of a modifying element in the underlying structure, either an indefinite pronoun or any other pronominal form marked for case. The surface form is the second verb V<sub>2</sub> in its *-ing* participle form in English or with an adjective forming suffix in Serbian (V-N-DAF). As Harley [2009: 217] indicates, the suffix *-ing* is appended only to “actual” verbs and never to bound roots, which provides fewer combinatory opportunities than with derivational agentive suffixes. This type mainly forms exocentric adjectival compounds and is not considered extremely productive.

(8)	THEME/PATIENT				<i>neck-breaking speed : vratolomna brzina</i>	
	<b>N<sub>m</sub></b>	<b>[WH]</b>	<b>V<sub>1</sub></b>	<b>[PRO<sub>case</sub>]</b>	<b>N</b>	<b>V<sub>2</sub></b>
	<i>speed</i>	<i>which</i>	<i>(cause)</i>	—	<i>neck</i>	<i>break</i>
	<i>brzina</i>	<i>koja</i>	<i>(uzrokovati)</i>	—	<i>vrat</i>	<i>lomiti</i>
	<i>speed</i>	<i>which</i>	<i>cause</i>	—	<i>neck</i>	<i>break</i>

Common English instances include: *blood-curdling*, *habit-forming*, *hair-raising*, *head-spinning*, *heart-breaking*, *heart-melting*, *heart-rending*, *jaw-dropping*, *mind-boggling*, *mouth-watering*, etc. Of the Serbian examples, the following could illustrate this model: *brak-o-lom-na* (marriage-INTF-break-DAF), *glav-o-lom-na* (head-INTF-break-DAF), *nad-o-bud-an* (hope-INTF-arouse-DAF), *ver-o-lom-an* (faith-INTF-break-DAF), etc.

However, Serbian has an example which falls out and slightly modifies the existing model. This very complex model implicates a compound base obtained through lexicalisation of the nominal and verbal elements from an embedded clause in the matrix, a pattern not registered in English, unless we can draw a parallel with the compound *head-spinning*.

(9)	EXPERIENCER				<i>vrtozlava brzina</i>	
	<b>N<sub>m</sub></b>	<b>[WH]</b>	<b>V<sub>1</sub></b>	<b>[PRO<sub>case</sub>]</b>	<b>V<sub>2</sub></b>	<b>[PREP]</b> <b>N</b>
	<i>brzina</i>	<i>koja</i>	<i>uzrokovati</i>	—	<i>vrzeti</i>	<i>u glava</i>
	<i>speed</i>	<i>which</i>	<i>cause</i>	—	<i>spin</i>	<i>in head</i>
	‘speed which causes someone’s head to spin’					

An alternative form of this model would be the case of verb-initialised compound lexemes, when the structure is sealed by a presupposed zero derivational morpheme in English (V-Ø-N). Among the more frequent English adjectives patterning on this are: *break-neck*, *catch-penny*, *cut-rate*, *cut-throat*, *pack-horse*, *telltale*, etc.

MODEL 7. This model involves adjective elements whose function is that of the subject in the matrix clause. The pattern applies to a pair of compound adjectives (English and Serbian compared) with the first constituent that surfaces in the form of an adjective rather than an adverb which is in a modification relationship with a participial form of the second constituent in English or a derivative adjective in Serbian.

## (10) ATTRIBUTE

*open-minded man : slobodouman novinar*

N <sub>m</sub>	[WH <sub>case</sub> ]	N	V <sub>cop</sub>	Adj
<i>man</i>	<i>whose</i>	<i>mind</i>	<i>be</i>	<i>open</i>
<i>novinar</i>	<i>čiji</i>	<i>um</i>	<i>biti</i>	<i>slobodan</i>
<i>journalist</i>	<i>whose</i>	<i>mind</i>	<i>be</i>	<i>free</i>

At the clausal level, the relation between the subject and its complement is realised on the basis of the copulative verb *to be*, a structure indicative of the essential or defining features of an entity, usually represented by the formula N<sub>1</sub> LV N<sub>1</sub> or N<sub>1</sub> LV Adj, as in *The edge is sharp*. The compound lexeme itself encompasses the predicative adjective and the subject of the matrix clause, with the adjective form fronted. As the primary constituent of the adjective compound is an adjective proper, it is necessary to introduce other derivational elements to uphold the adjectival status of the lexeme. In English it is the suffix *-ed*,<sup>7</sup> as the structure *\*open-mind* would not acquire adequate semantic and syntactic properties, while in Serbian the whole process is somewhat more complex. It presupposes two derivational bases (devoid of any inflection) and interfixation, to be seen in *\*slobod-o-um* (freedom-INTF-mind-Ø), as well as an instance of final suffixation by either *-an* or *-Ø*, as in *plav-o-ok* (blue-INTF-eye-Ø) ‘blue-eyed’ and *mlad-o-lik* (young-INTF-face-Ø) ‘young-faced’ and many similar compounds.

Plenty of adjective compounds can be enumerated within this scheme: *absent-minded*, *broad-leaved*, *foul-mouthed*, *large-statured*, *long-nosed*, *loud-mouthed*, *tight-fisted*, *sharp-eared*, *square-jawed*, *straight-faced*, and others. Some compounds from Serbian are: *crn-o-kos* (black-INTF-hair-Ø), *crven-o-kos* (red-INTF-hair-Ø), *dug-o-kos* (long-INTF-hair-Ø), *dug-o-uh* (long-INTF-ear-Ø), *oštr-o-ok* (sharp-INTF-eye-Ø), *plitk-o-um-an* (shallow-INTF-mind-DAF), *sed-o-kos* (grey-INTF-hair-Ø), *šuplj-o-glav* (empty-INTF-head-Ø), *dobr-o-duš-an* (good-INTF-soul-DAF), *drag-o-cen* (dear-INTF-price-Ø), *hladn-o-krv-an* (cold-INTF-blood-DAF), *kratk-o-dlak* (short-INTF-hair-Ø), *oštr-o-um-an* (sharp-INTF-wit-DAF), *prav-o-vreme-na* (right-INTF-time-DAF), and the like.

MODEL 8. The next model with a shared underlying structure would be the one producing a surface compound item which sources from an adjective phrase in the matrix clause with an adjective head post-modified by a prepositional phrase. The first element is of nominal origin with an instrumental or locative thematic role. Two sub-types could be established within this model:

## (11) SOURCE/INSTRUMENT

*travel-weary passenger : krvožedan pas*

N <sub>m</sub>	[WH]	V <sub>cop</sub>	Adj	[PREP]	N
<i>passenger</i>	<i>who</i>	<i>be</i>	<i>weary</i>	<i>of</i>	<i>travel</i>
<i>pas</i>	<i>koji</i>	<i>biti</i>	<i>žedan</i>	<i>za</i>	<i>krv</i>
<i>dog</i>	<i>which</i>	<i>be</i>	<i>thirsty</i>	<i>for</i>	<i>blood</i>

The English language abounds in compounds of this pattern, as it appears to be highly productive. Several groups could be identified here based on specific second elements: *bloodthirsty*, *bomb-happy*, *capital-intensive*, *child-proof*, *chocolate-coated*, *colour-blind*, *fireproof*, *fool-proof*, *football-mad*, *iron-clad*, *lead-free*, *lovesick*, *machine readable*, *moon-sick*, *punch-drunk*, *rent free*, *snow-blind*, etc. This pattern would include examples such as *germ-resistant* and the like, even though the nominal element appears to be reduced by the plural morph. This model can also be exemplified by forms such as *fail-safe* or *shatter-proof*, where the first element *shatter-ing* is freed of the participle/gerund inflectional ending. Questions such as whether *bloodthirsty* was derived from *blood thirst*, or whether *bloodthirst* is a product of back formation can be most successfully resolved by means of etymological referencing. Among the Serbian compounds of this model, some of the examples are: *bog-o-bojaz-na* (god-INTF-fear-DAF), *vatr-o-otpor-no* (flame-INTF-resist-DAF),

<sup>7</sup> The suffix is typical of English and is derivational in character. It stems from the OE *-ede* and OTeut *-ōdjo-*. As OED maintains, it “...is appended to ns. in order to form adjs. connoting the possession or the presence of the attribute or thing expressed by the n.” See [Simpson, Weiner 2009], entry *-ed*<sub>2</sub>.

*vatr-o-sigur-an* (fire-INTF-safe-DAF), *vod-o-otpor-an* (water-INTF-resist-DAF), *zl-o-rad* (evil-INTF-joy-Ø), while others indicate a similar relation established on the basis of implicit but unexpressed case endings, as in *bog-o-protiv-an* (god.DAT-INTF-resist-DAF), *bog-o-ugod-an* (god.DAT-INTF-dear-DAF), *bes-o-muč-an* (rage.INS-INTF-torment-DAF), *ver-o-dostoj-an* (truth.ACC-INTF-worth-DAF), etc. Serbian compounds of this type mostly sound archaic, as it can be seen in the cluster of words *vlast-o-hlep-an* (power.ACC-INTF-greed-DAF) ‘power-hungry’, *čast-o-help-an* (honour.ACC-INTF-greed-DAF) ‘honour-hungry’, and *slav-o-help-an* (fame.ACC-INTF-greed-DAF) ‘fame-hungry’. The adjectival complement origin of the inherent structure could be postulated for such classic examples of Serbian compounding as the age-old *staroslavne* ‘famous from antiquity’. Some dubious cases of Serbian compounding, such as *brodoplovan* ‘sailable by ships’, could be perhaps associated with this pattern.

The other sub-type entails a different thematic role of the nominal element, as the underlying structure would be based on a prepositional phrase indicative of a source or location of the manifested quality.

(12) SOURCE/LOCATION						<i>foot-sore traveller</i> : <i>vatrostalna</i> činija
N <sub>m</sub>	[WH]	V <sub>cop</sub>	Adj	[PREP]	N	
<i>traveller</i>	<i>who</i>	<i>be</i>	<i>sore</i>	<i>in</i>	<i>foot</i>	
<i>činija</i>	<i>koja</i>	<i>biti</i>	<i>stalna</i>	<i>na</i>	<i>vatra</i>	
<i>bowl</i>	<i>which</i>	<i>be</i>	<i>resistant</i>	<i>to</i>	<i>heat</i>	

Some other compounds include: *brainsick*, *brim-full*, *colour-fast*, *earth-fast*, *foot-loose*, *foot-sore*, *head-strong*, *heart-happy*, *heart-sick*, *heart-whole*, *neck-strong*, *night-blind*, *nose-heavy*, *root-fast*, *seasick*, *top-heavy*, *water-soluble*, and *world-famous*. Their Serbian counterparts could be *zim-zelen* (winter-Ø-green), although its English equivalent *evergreen* is of different origin.

MODEL 9. This is one of the basic models for the formation of adjective compounds, in particular those that refer to non-human objects. The model is postulated since non-human entities may be characterized by a number of qualities in terms of number, size, age, shape, colour, material, etc. excluding possession in the human sense of the word. The outcome compound lexeme sources from a prepositional phrase the grammatical function of which is equivalent to the function of the genitive inflectional marking on nouns or phrases based on the verb ‘to have’, while its thematic roles can be various. Both languages imply further derivation of a compounded base. In English, the suffix *-ed* is appended, while in Serbian it is *-an*, or *-ski/-čki*, or *-Ø višečlan* ‘of many elements’. The adjectival constituent involves *više-* ‘many’, *mnogo-* ‘much’, and even *vlastiti-* ‘own’ as in *vlastoručan* ‘written by own hand’. Some Serbian descriptive and classifying adjectives follow this pattern, such as *zapadnoevropski* ‘Western European’, *zdravorazumski* ‘of/by sound mind’. Stevanović [1991] and Klajn [2002] tend to group compounds like *onovremenski* ‘of that time’, *ovonedeljni* ‘of this week’ and *svojevoljna* ‘by own will’ with others that have a pronominal first constituent, but the interpretation of these compounds would obviously allow for this structural model.

(13) SOURCE/LOCATION/TARGET						<i>many-faceted stone</i> : <i>mnogospratna</i> građevina/ <i>malogradski</i> manir
N <sub>m</sub>	[WH]	V <sub>cop</sub>	[PREP]	Adj	N	
<i>stone</i>	<i>which</i>	<i>be</i>	<i>of</i>	<i>many</i>	<i>facet</i>	
<i>građevina</i>	<i>koja</i>	<i>biti</i>	<i>od</i>	<i>mnogo</i>	<i>sprat</i>	
‘building	<i>which</i>	<i>be</i>	<i>of</i>	<i>many</i>	<i>storey</i>	
<i>manir</i>	<i>koji</i>	<i>biti</i>	<i>iz</i>	<i>mali</i>	<i>grad</i>	
‘way	<i>which</i>	<i>be</i>	<i>from</i>	<i>small</i>	<i>town</i>	

The English contingent of lexemes is comprised by compounds such as: *single-handed*, *many-headed*, *many-worded*, *many-valued*, *middle-aged*, etc. Serbian examples seem to be more diverse: *blag-o-vreme-n* (good-INTF-time.GEN-DAF), *kratk-o-vid* (short-INTF-sight.GEN-Ø), *ov-o-zemaljski*

(this-INTF-earth.GEN-DAF), *prav-o-ug-li* (right-INTF-angle.GEN-DAF), *prav-o-vreme-n* (right-INTF-time.GEN-DAF), *sred-o-zem-ni* (middle-INTF-earth.GEN-DAF), *sred-o-pos-ni* (middle-INTF-lent.GEN-DAF), *sred-o-let-ni* (middle-INTF-summer.GEN-DAF), *svoj-e-glav* (OWN-INTF-head.GEN-Ø), *više-sat-ni* (many-hour.GEN-DAF) Klajn [2002: 77 ff].

MODEL 10. The next three models have an adjective as their primary constituent, so that the sematic or thematic roles they have in acts of communication are determined accordingly, primarily those of ATTRIBUTE, DIFFERENCE, DURATION, SPEED, etc.<sup>8</sup> Due to case marking on the head-noun, the implicit function of the adjective is that of an object. However, the surface ordering of the constituents of such compounds in English is reversed to the one in the matrix clause, akin to model 4, while in Serbian the verb is frontal, which may cause a difference in thematic role determination. The verb-based compound elements on the surface are different. In English it is the passivized past participle (*Someone bore a child* vs. *A child was born*), and in Serbian it is the imperative form of the verb. Thus, the matrix clause is of the same structure as given below, but the differences are found in the ordering of elements as well as in the voice and mood of surface forms. The examples *nazovimudar* ‘quasi-wise’ and *nazoviumetnički* ‘quasi-artistic’ are cited by Klajn [2002: 122], whereas Vujanić et al. [2007: 767] establish *nazovi-* as “the first part of noun and adjective compounds which states that what the head means is not essentially true, but it is false, apparent, ostensible, etc.”

(14) ATTRIBUTE					<i>free-born child</i> : <i>nazovimoderan nameštaj</i>
<b>N<sub>m</sub></b>	<b>[WH<sub>case</sub>]</b>	<b>[PRO]</b>	<b>V</b>	<b>Adj</b>	
<i>child</i>	<i>whom</i>	—	<i>bear</i>	<i>free</i>	
<i>nameštaj</i>	<i>kog</i>	—	<i>nazvati</i>	<i>moderan</i>	
<i>furniture</i>	<i>which</i>	—	<i>call</i>	<i>modern</i>	

Some of the more frequent English compounds are: *firstborn*, *ill-judged*, *ready-made*, *secondborn*, *stillborn*, etc. Some of the possible Serbian language formations are: *nazovi-brat-ski* (call.IMP-brother-DAF), *nazovi-mudar* (call.IMP-wise), *nazovi-otmen* (call.IMP-posh), *nazovi-praved-an* (call.IMP-just-DAF), *nazovi-socijalisti-čki* (call.IMP-socialist-DAF) and the like.

MODEL 11. The compounding model with two coordinated adjectives yields coordinated, or dvandva, compounds, a common feature in many languages including English and Serbian. There are plenty established and potential compound adjectives which combine two qualities or colours characteristic of an entity, as in *red-blue* or *crveno-plavi*.

(15) ATTRIBUTE COORDINATION					<i>deaf-mute woman</i> : <i>gluvonema žena</i>
<b>N<sub>m</sub></b>	<b>[WH]</b>	<b>V<sub>cop</sub></b>	<b>Adj<sub>1</sub></b>	<b>[COORD]</b>	<b>Adj<sub>2</sub></b>
<i>woman</i>	<i>who</i>	<i>be</i>	<i>deaf</i>	<i>(and)</i>	<i>mute</i>
<i>žena</i>	<i>koja</i>	<i>biti</i>	<i>gluva</i>	<i>(i)</i>	<i>nema</i>
<i>woman</i>	<i>who</i>	<i>be</i>	<i>deaf</i>	<i>(and)</i>	<i>mute</i>

The examples often quoted in the literature on English are: *bitter-sweet*, *devilish-holy*, *foolish-witty*, *grim-taciturn*, *hardy-handsome*, *harsh-rude*, *shabby-genteel*, *sober-sad*, *sweet-sour*, *yellow-green*. In Serbian, there are: *crn-o-beli* (black-INTF-white), *crn-o-žuta* (black-INTF-yellow), *gluv-o-nem* (deaf-INTF-mute), *gork-o-slan* (bitter-INTF-salty), *plav-o-siv* (blue-INTF-grey), *siv-o-maslina-sta* (grey-INTF-olive-DAF), *slatk-o-slan* (sweet-INTF-savoury), *slatk-o-bol-an* (sweet-INTF-pain-DAF), *star-o-drevni* (old-INTF-ancient), *žut-o-zelena* (yellow-INTF-green), and the like, with the suggestion that the forms with no hyphen used in orthography are likely to indicate colour nuances. The compounds *razn-o-razni* (various-INTF-various) and *sam-o-sam* (alone-INTF-alone) with identical adjective bases reduplicated make a unique case.

MODEL 12. In a similar way to the previous model, model 12 coordinates two adjective bases into a compound form that stems from nominal entities in the matrix clause. This means that these are primarily relational adjective compounds, not descriptive modifiers. Adjectives in the source

<sup>8</sup> The semantic role labeling employed in the models was based upon Jurafsky and Martin [2009].

clausal structure could provide an interpretation that would not correspond to the semantic motivation for the composition process. In both languages, bases can be reduced in form and an interfix can be added. Frequent first part segments in English are: *dramatic-o-*, *economic-o-*, *historic-o-*, *oblong-o-*, *plan-o-*, *physic-o-*, *soci-o-*, among others. Anderson [1992: 298–300] considers similar words as “pseudo-compounds”, apparently without any more solid argumentation as to why these compounds should be treated as “pseudo”, since the considered forms qualify for the status of roots, and are extensively used in neoclassical and other compounds.

(16) SOURCE/LOCATION				<i>Polish-German border : grčko-turska granica</i>		
N <sub>m</sub>	[WH]	V <sub>cop</sub>	[PREP]	N <sub>1</sub>	[COORD]	N <sub>2</sub>
<i>border</i>	<i>which</i>	<i>be</i>	<i>between</i>	<i>Poland</i>	<i>and</i>	<i>Germany</i>
<i>granica</i>	<i>koja</i>	<i>biti</i>	<i>između</i>	<i>Grčka</i>	<i>i</i>	<i>Turska</i>
<i>border</i>	<i>which</i>	<i>be</i>	<i>between</i>	<i>Greece</i>	<i>and</i>	<i>Turkey</i>

A number of adjective compounds belongs within this pattern: *Anglo-Saxon*, *Greco-Roman*, *Franco-Prussian*, *Serbo-Croatian*, *Sino-Japanese*, *serio-comic*, *socio-political*, *spatio-temporal*, etc. Some of their counterparts exist in Serbian, along with a number of other compounds: *anglo-američki* (English-INTF-American-DAF), *društv-en-o-ekonom-ski* (society-DAF-INTF-economy-DAF), *književn-o-jezi-čki* (literature-INTF-language-DAF), *kultur-n-o-istorij-ski* (culture-DAF-INTF-history-DAF), *voj-n-o-politi-čki* (military-DAF-INTF-politics-DAF), *prav-n-o-društv-en-i* (leg-DAF-INTF-society-DAF-IAF), *prostor-n-o-vreme-n-ski* (space-DAF-INTF-time-DAF-DAF), *ras-n-o-nacion-al-ni* (race-DAF-INTF-nation-DAF-DAF), *rus-k-o-sloven-ski* (Russian-DAF-INTF-Slavic-DAF), *slaven-o-srp-ski* (Slavic-DAF-INTF-Serbian-DAF), etc.

MODEL 13. The following three models are based on adverbs as first constituents, whose source is the verbal phrase from the matrix clause or a modified adjective phrase. The thematic role implies adverbial modification of an action definitive of the noun. In Serbian literature, there is uncertainty about the category of the first element of these compounds. They are said to be fronted by an adjective or an adverb, but in *tank-o-ćut-an* (exquisite-INTF-feel-DAF) ‘sensitive’ and *dalek-o-met-an* ‘far-reaching’, the modifying element is indubitably adverbial in nature. However, examples such as *dalek-o-vid* (far-INTF-see-Ø) ‘long-sighted’ or ‘far-sighted’ point to the fact that the second constituent should be treated as a noun, rather than a verb,<sup>9</sup> and thus belong to the model 7. Moreover, the Serbian contingent includes examples based on the active participial such as *dobr-o-stoje-ći* (well-INTF-stand-IAF) ‘well-off’ and passive *blaž-en-o-poči-vši* (bless-DEF-INTF-rest-IAF) ‘blessed in death’, but there are also compounds with the null suffix, e.g. *mrk-o-gled* (grim-INTF-look-Ø) ‘scowling’, *-an/-ni* suffix: *spor-o-hod-ni* (slow-INTF-walk-DAF) ‘slow-moving’ or *blag-o-tvor-an* (good-INTF-make-DAF) ‘well-doing’. The second element of these compounds is to be differentiated from participial adjectives such as *daring*, *humiliating*, *interesting*, *trying*, etc., since the underlying clausal structure would be in discord with the intended interpretation, and any established or possible compounds would belong with model 15.

(17) MANNER/DIFFERENCE/DURATION				<i>high-flying bird : kratkotrajan bol</i>	
N <sub>m</sub>	[WH]	V	Adv		
<i>bird</i>	<i>which</i>	<i>fly</i>	<i>high</i>		
<i>bol</i>	<i>koji</i>	<i>trajati</i>	<i>kratko</i>		
<i>pain</i>	<i>that</i>	<i>last</i>	<i>short</i>		

As Roeper and Siegel [1978: 226] point out, adverbs incorporated within this pattern may be optionally with or without the derivational suffix *-ly*, as in *smart(ly)-dressing* or *free(ly)-moving*.

This model may be illustrated by numerous compound adjectives in English, some of which are: *easy-going*, *far-seeing*, *fast-growing*, *hard-hitting*, *hard-working*, *long-lasting*, *long-suffering*, *low-lying*, *plain-speaking*, *slow-moving*, etc. Perhaps, we could also list here examples such

<sup>9</sup> [Simpson, Weiner 2009] in OED provide an explanation for *long-sighted* as “1.1 Having ‘long sight’ (see long a. 18); capable of distinguishing objects clearly at a distance but not close at hand; hypermetropic.”

as *high-rise* and *quick-change*, mentioned in [Bauer 1983: 212], whose description he qualifies as awkward. One of the reasons for that may be the implicit elimination of verbal inflection in the verbal element (*\*high-ris-ing*) and involving the -Ø suffix. Some Serbian counterparts are: *brz-o-misl-en* (quick-INTF-think-DAF), *brz-o-plov-an* (quick-INTF-sail-DAF), *brz-o-potez-ni* (quick-INTF-draw-DAF), *brz-o-trk* (quick-INTF-run-Ø), *dalek-o-sež-ne* (far-INTF-reach-DAF), *dug-o-traj-an* (long-INTF-last-DAF), *lep-o-rek* (well-INTF-speak-Ø), *slab-o-misl-en* (slow-INTF-think-DAF), *spor-o-gore-ći* (slow-INTF-burn-IAF), *spor-o-voz-ni* (slow-INTF-drive-DAF), etc.

MODEL 14. Both English and Serbian appear to have all the frequent, salient, and logically acceptable adverb and adjective combinations within compounds, involving present and past participles, as well as proper adjectives. This model is different from the previous one in the sense that a matrix subject could be postulated empty, assuming that no passivisation could occur at this level of language unit formation. This makes the key difference in approach from the treatment presented in Roeper and Siegel [1978].<sup>10</sup> The verb surfaces as a past participle in the second constituent of the compound, which is to be distinguished from the cases when the compound base is suffixed with the derivational -ed. The first element of the compound is an adverb in its own right, such as *much* or *half*, or may also be a reduced form, devoid of adverbial derivation, as in (18).

(18) MANNER/DIFFERENCE/DURATION				<i>fresh-baked bread</i> : <i>mnogopoštovani pisac</i>
N <sub>m</sub>	[WH <sub>case</sub> ]	[PRO]	V	Adv
<i>bread</i>	<i>which</i>	—	<i>bake</i>	<i>fresh(ly)</i>
<i>pisac</i>	<i>koga</i>	—	<i>poštovati</i>	<i>mnogo</i>
<i>writer</i>	<i>whom</i>	—	<i>respect</i>	<i>much</i>

The English compounds of this type are: *clean-shaven*, *close-knit*, *dear-bought*, *half-baked*, *fresh-fried*, *fresh-ironed*, *fresh-ploughed*, *high strung*, *newborn*, *new found*, *new-clad*, *new-laid*, *newly-wed*, *new-sown*, *rough-hewn*, *so-called*, *well-known*, *wide-spread*, etc. The Serbian compounds: *dobr-o-zn-an* (well-INTF-know-DAF), *dol-e-potpis-an-i* (below-INTF-sign-DAF-IAF), *gor-e-imenov-an-i* (above-INTF-name-DAF-IAF), *mnog-o-napać-en* (much-INTF-suffer-DAF), *visok-o-kvalifikov-an* (highly-INTF-qualify-DAF), *visok-o-nadar-en* (highly-INTF-talent-DAF), *visok-o-poštov-an-i* (much-INTF-respect-DAF-IAF), *nov-o-izabra-na* (newly-INTF-elect-DAF), *nov-o-komponova-na* (newly-INTF-compose-DAF), *nov-o-peč-en-i* (newly-INTF-make-DAF-IAF), *nov-o-steč-eno* (newly-INTF-gain-DAF), and *tak-o-zv-an-i* (so-INTF-call-DAF-IAF). Regardless of the fact that the first elements of the compounds *firstborn* and *prv-o-rođ-en-i* (first-INTF-bear-DAF-IAF) are ordinal numbers, their meaning and function is adverbial; therefore, they are to be listed in this group.

MODEL 15. These are compounds encompassing a modifying adverb and an adjective head, a potentially very important model. The implication is that these belong to a predicative adjective phrase in the matrix clause. The thematic roles are pertinent to the degree of the quality in question. As opposed to the approach in [Klajn 2002], the first constituent in a number of compounds is taken here to be an adverb. This is understandable since the compound stems from a modified structure where the first constituent modifies the adjectival head, as in *yellowish-brown* or *mrkožut* 'brownish-yellow'. The examples that would undoubtedly be adverb-adjective lexicalisations are along the line of *niskoproduktivan* 'low-productive' and *blagonaklon* 'well-inclined'. At times, the constituents in Serbian may be reduced, as in *sveopšti* 'all-out' and thus hinder interpretation. In the said case, the first constituent imposes itself as a modifier for the second in a structure of modification from the matrix clause. It is a kind of intensification by a semantically related constituent that can be regarded as enhancement by synonymy, as in *starodrevan* 'old and ancient' mentioned by Klajn [2002: 101].

<sup>10</sup> "Unfortunately, it is very difficult to show that the relative clause source is inadequate for these expressions. There is no progressive reading that distinguishes the relative clause versions. Thus, there is no obvious difference in meaning between *the meal which was prepared well* and *the well-prepared meal*" [Roeper, Siegel 1978: 231].

(19)	ATTRIBUTE	<i>wide-awake guard : jarkoružičast kišobran</i>			
	<b>N<sub>m</sub></b>	<b>[WH]</b>	<b>V<sub>cop</sub></b>	<b>Adv</b>	<b>Adj</b>
	<i>guard</i>	<i>who</i>	<i>be</i>	<i>wide</i>	<i>awake</i>
	<i>kišobran</i>	<i>koji</i>	<i>biti</i>	<i>jarko</i>	<i>ružičast</i>
	<i>umbrella</i>	<i>that</i>	<i>be</i>	<i>brightly</i>	<i>pink</i>

It appears reasonable to include here examples of adjective compounds from both of the languages that have been posing a bit of a classifying problem, e.g. *dark blue* (*tamno plav*) or *light green* (*svetlo zelena*). As the form of the first element is adjectival and the function adverbial, it can only be accountable through an instance of transposition or functional shift, where the adjectival forms function as adverbs, cf. nouns modifying nouns in *stone wall*. This interpretation is perhaps more acceptable than the explanation by which these two are both adjectives co-ordinately modifying the head noun in the phrase.

In English, some of the more frequent compounds are *cross-modal*, *evergreen*, *light-blue*, *mock-heroic*, *wide awake*. In Serbian, these are: *jasn-o-žut* (clear-INTF-yellow), *mutn-o-beo* (turbid-INTF-white), *otvoren-o-žut* (clear-INTF-yellow), *prljav-o-beo* (dirty-INTF-white) 'off-white', *tamn-o-siv* (dark-INTF-grey), *sjajn-o-zelen* (shiny-INTF-green), *svetl-o-crven* (bright-INTF-red), *svetl-o-žut* (light-INTF-yellow), *zagasit-o-smeđ* (dark-INTF-brown), *zatvoren-o-siv* (dark-INTF-grey), etc.

MODEL 16. This formative pattern involves compounding adjectives with numerals, the last of the nine models that could be interpreted to presuppose a copulative verb in the matrix. The immediate source is a noun phrase transforming into a compound base; the adjectival form is achieved via suffixation. In English, the suffixes are *-ed* or *-al*, and in Serbian *-an/-ni* as in *dvo-satni* 'of two hours' or *-Ø* as in *jednoruk* 'one-armed'. The languages recognise *half-* or *polu-* as the first constituent as well as compounds based on ordinal numbers as in *trećerazredni* 'third rate' or *first-ranked*. This confirms that in both languages the composition process involves derivational suffixation.

(20)	SOURCE/LOCATION/TARGET	<i>two-headed eagle : stoletni hrast</i>				
	<b>N<sub>m</sub></b>	<b>[WH]</b>	<b>V<sub>cop</sub></b>	<b>[PREP]</b>	<b>Num</b>	<b>N</b>
	<i>eagle</i>	<i>which</i>	<i>be</i>	<i>of</i>	<i>two</i>	<i>head</i>
	<i>hrast</i>	<i>koji</i>	<i>biti</i>	<i>od</i>	<i>sto</i>	<i>leto</i>
	<i>oak</i>	<i>which</i>	<i>be</i>	<i>of</i>	<i>hundred</i>	<i>summer</i>

Within this scheme, the following are established and possible formations in English: *double-edged*, *four-footed*, *hundredfold*, *one-sided*, *seven-hilled*, *three-fingered*, *three-forked*, *two-faced*, *two-leaved*, *ten-fold*, and in Serbian: *četvor-o-nož-an* (four-INTF-leg-DAF), *dv-o-jezič-na* (two-INTF-language-DAF), *dv-o-kril-na* (two-INTF-wing-DAF), *jedn-o-del-an* (one-INTF-part-DAF), *jedn-o-sob-an* (one-INTF-room-DAF), *st-o-postot-na* (hundred-INTF-percent-DAF), *tr-o-boj-na* (three-INTF-colour-DAF), *tr-o-sloj-an* (three-INTF-layer-DAF), and many more.

Another group is formed by adjective compounds whose first element is an ordinal numeral, as in the Serbian *drug-o-razred-ni* (second-INTF-grade-DAF), *drug-o-stepe-ni* (second-INTF-degree-DAF), *prv-o-brač-na* (first-INTF-marriage-DAF), *prv-o-klas-an* (first-INTF-class-DAF), *prv-o-sprat-ni* (first-INTF-storey-DAF), and suchlike formations. However, English does not express a tendency for similar compounds, unless we presuppose the existence of a zero derivational morpheme in opposition with other derivational, adjective forming suffixes such as *-al* or *-ing*. Examples such as *third-dimensional*, *second-guessing*, are few and far between.

MODEL 17. This is a model that involves pronouns. Both its patterns have lexical verbs as predicates and pronouns as their arguments. On the surface, the verbal form in the second constituent becomes a present/active participle in English and present verbal adjunct in Serbian. Other examples would include *isto znač-an* 'meaning the same' and *sveobuhva-tan* 'all-encompassing'.

(21) THEME/PATIENT

N <sub>m</sub>	[WH]	V	Pron
power	which	destroy	all
komšinica	koja	znati	sve
neighbour	who	know	all

*all-destroying power* : *sveznajuća komšinica*

The list of English example compounds consists of: *all-consuming*, *all-encompassing*, *all-including*, *all-knowing*, *all-loving*, *all-pervading*, *all-seeing*, etc. There are alternants with derivational affixes which call for morpho-phonological rule application in the base, such as *all-inclusive*, *all-pervasive*, etc. Several Serbian compounds have been modelled on this pattern, both with participial and derivational endings: *sv-e-mog-uć* (all-INTF-can.3SG.PRS-DAF-Ø), *sv-e-vid-eć-i* (all-INTF-see-3SG.PRS-DAF-IAF), *sv-e-pobed-an* (all-INTF-win-DAF), *sv-e-rešava-juć-i* (all-INTF-solve-3SG.PRS-DAF-IAF), *sv-e-razor-an* (all-INTF-destroy-DAF), *sv-e-ukup-an* (all-INTF-total-DAF), etc.

Both languages have productive patterns of combining the pronoun *self* or *samo* 'self' with verb-based second elements as in *self-adjusting*, *self-sacrificing*, *self-taught*, *self-important*, and *self-explanatory*; or *sam-o-uk* (self-INTF-teach-Ø), *sam-o-kritič-an* (self-INTF-criticize-DAF), *sam-o-nik-ao* (self-INTF-sprout-IAF), etc.

## 2.2. Formative-semantic models of adjective compounds in English and Serbian: Differences

The second segment presents the models that lie outside the intersection between English and Serbian. In the former language, there are 15 additional models that can be postulated, thus making the total number of 32 models. As for the latter, there are only two more models specific for Serbian, making the total sum of 19 possible patterns in the language. The models are viewed in separate sections, 2.2.1 and 2.2.2, respectively. By a simple comparison, it can be deduced that English exhibits a considerably greater capacity for adjective compound formation than Serbian.

### 2.2.1. Formative-semantic models of adjective compounds in English

MODEL 18. The first model typical of English and lacking in Serbian is the one that incorporates forms of a noun and an *-ing* (active) participle within its surface structure. The elements can be said to source from a core predicative structure in the matrix clause. The participle has its origin in the verbal part of the source structure, which can be seen from the pattern presented below (22). This is potentially a rather productive model, since the process of adjectivisation by means of the *-ing* suffix offers almost boundless possibilities of putting any N+V lexical combination into an attributive function.

(22) THEME/PATIENT

N <sub>m</sub>	[WH <sub>case</sub> ]	N	V
wall	of which	paint	peel

*paint-peeling wall*

As there are not many listed words, the following may be considered possible compounds in English with clear formal and semantic features: *business-flourishing*, *eyelash-fluttering*, *knee-clenching*, *nose-bleeding*, *profit-growing*, *skin-shedding*, etc.

MODELS 19—23. The ensuing group is a section of five exclusively English models that brings together patterns with a superficial second constituent in the form of a past/passive participle. The discrepancy between the languages lies in the fact that the past/passive participle derived from clausal structure models is much more available in English lexeme formation than in Serbian. These models produce compound adjectives that bring into a formative relation the subject and the predicate of the matrix clause or the predicate and its modifiers. The last three models in this group are structurally identical, the difference being in the thematic role of their nominal

elements. Due to the participial nature of the second constituent, the verbs in the matrix clauses are uniformly lexical; this is another reason why these models of adjective compound formation are not present in Serbian.

- (23) AGENT/EXPERIENCER *man-made port*  
 $N_m$  [WH] N V  
*port which man make*

Other English compounds modelled similarly are: *foreigner-built*, *god-forbidden*, *god-forsaken*, *god-given*, *god-inspired*, *god-made*, *government-owned*, *hen-pecked*, *moth-eaten*, *mouse-nibbled*, *mother-dominated*, *tailor-made*, *terrorist-infiltrated*, among others.

- (24) FORCE *thunder-struck individuals*  
 $N_m$  [WH]  $V_{cop}$   $V_{ed}$  [PREP] N  
*individuals who be struck by thunder*

As there are natural phenomena and artificial objects that could not be thought of as conscious agents and performers of actions (and thence the thematic role), this model encompasses those cases that involve passive structures based on natural forces or man-made concepts as logical subjects. Examples illustrating this model are not infrequent: *conscience-stricken*, *drug-induced*, *gin-soaked*, *horror-stricken*, *hunger-bitten*, *lichen-grown*, *jet-propelled*, *leaf-strewn*, *moss-clad*, *moss-grown*, *pock-marked*, *poverty-stricken*, *spellbound*, and *weather-beaten*.

- (25) SOURCE/LOCATION *home-made bread*  
 $N_m$  [WH] [PRO] V [PREP] N  
*bread which — make at home*

This is a rather productive model which involves a nominal element whose thematic role indicates the location of the action. The nominal is fronted, and the action itself is contained in the participial second element. The possibilities are almost limitless, as almost any verb can serve the purpose, *base*, *bear*, *breed*, *raise*, and the like being among the most prominent: *airborne*, *college bred*, *factory-packed*, *heart-felt*, *heaven-born*, *hell-bent*, *London-trained*, *Moscow-based*, *Paris-made*, *sea-born*, *space-borne*, *town bred*, *world-renowned*, etc.

- (26) INSTRUMENT *spoon-fed patient*  
 $N_m$  [WH<sub>case</sub>] [PRO] V [PREP] N  
*patient whom — feed with spoon*

The following examples with noun-initial elements point to the instrument of the action, although there are alternative interpretations. Be that as it may, the underlying structure remains the same: *armour-clad*, *bomb-blasted*, *iron-clad*, *machine-made*, *paper-bound*, *shop-soiled*, *star-spangled*, *time-honoured*, *shaving-strewn*, *book-learned*, and others.

- (27) SOURCE/LOCATION/TARGET *diamond-cut stone*  
 $N_m$  [WH<sub>case</sub>] [PRO] V [PREP] N  
*stone which — cut in diamond (shape)*

With these compounds, there is an element unexpressed on the surface which complements the meaning of the entire concept. Like the previous three models, this one entails a case relation among the elements in the matrix (instrumental, locative, etc.) that is marked by an analytic form with a preposition that introduces a phrase, as with *in diamond shape*, *by paper*, *in armour*, and others. The prepositions are normally *for*, *in*, *into*, *to*, *with*, etc. Some examples are: *canal-built*, *capacity-filled*, *custom-built*, *custom-made*, *customer-shrunken*, *safety-tested*, *sex-linked*, *shard-torn*, *table-cut*, etc.

MODEL 24. Within this model, the first constituent is in the form of a past/passive participle, which is untypical of the Serbian language, particularly if we take real compounds into consideration, not what has been traditionally treated as semi-compound in Serbian literature, i.e. all

hyphenated lexical structures. However, as opposed to participles in the second constituent, these are more adjectival in nature and are therefore not products of passivisation. They have to be postulated in the matrix clause as such. A particularly productive first element proves to be *broken-*, another is *swollen-*.

- (28) THEME/PATIENT *broken-handed electrician*  

<b>N<sub>m</sub></b>	<b>[WH<sub>case</sub>]</b>	<b>N</b>	<b>V<sub>cop</sub></b>	<b>V<sub>ed</sub></b>
<i>electrician</i>	<i>whose</i>	<i>hand</i>	<i>be</i>	<i>broken</i>

Additional examples: *broken-ended, broken-footed, broken-fortuned, broken-headed, broken-hearted, broken-hipped, broken-hoofed, broken-legged, broken-minded, broken-nosed, broken-paced, broken-spirited, broken-winged*, etc. However, the same model can produce another arrangement of elements on the surface, where the initial element is the subject form the matrix clause: *air-conditioned, brow-furrowed, chop-fallen, crest-fallen, heart-broken, hip-shot, jaw-fallen, tip-tilted, tongue-tied, trade-fallen*, and other compounds.

MODELS 25—26. The next set of patterns is composed of two models where the second constituent of the surface form is a proper adjective. This constituent is combined with prepositions and verbs from the matrix structure found in the framework of the adjective phrase whose head is the adjective itself. Model 25 is relatively well represented in English [Carstairs-McCarthy 2002: 61], as in *underfull* and other examples given below. Only two prepositions are systematically used for compounding, namely *over* and *under*, while others build nominal modifiers of the type *below-deck* more commonly. Model 26, exemplified by (30), makes another difference in comparison to the Serbian language, the difference being caused by the more prominent capacity of English to incorporate verb forms within the first compound element on the surface.

- (29) ATTRIBUTE *overactive child*  

<b>N<sub>m</sub></b>	<b>[WH]</b>	<b>V<sub>cop</sub></b>	<b>Adj</b>	<b>[PREP]</b>	<b>N</b>
<i>child</i>	<i>who</i>	<i>be</i>	<i>active</i>	<i>over</i>	<i>(limit)</i>

Other formations based on the pattern which indicates surpassing an expected limit or boundary would be: *overdone, overenthusiastic, overfed, over-qualified, overwhelmed, overworked, overwrought, underfed, underdone, underpaid*, etc.

- (30) ATTRIBUTE *scorching-hot weather*  

<b>N<sub>m</sub></b>	<b>[WH]</b>	<b>V<sub>cop</sub></b>	<b>Adj</b>	<b>that</b>	<b>[PRO]</b>	<b>V</b>
<i>weather</i>	<i>which</i>	<i>be</i>	<i>hot</i>	<i>that</i>	—	<i>scorch</i>

The illustrative compound list comprises the following: *barking mad, fighting drunk, freezing cold, hopping mad, piping hot, roaring drunk, shocking pink, wringing wet, yawning dull*, etc. A more recent example is *raving mad* which could be accounted for by ellipsis from the phrase *stark raving mad*.

MODELS 27—29. There are three other models initialled by adjectives which are not found in Serbian as well. The reason for that is the fact that Serbian doesn't form compound items from matrix clauses if the predicate is any of the linking verbs other than the verb 'to be'. In other words, English linking verbs establish a relation between the subject and the complement in the form of an adjective that patterns as N<sub>i</sub> LV Adj, the most frequent are: *act, appear, become, go, grow, look, prove, smell, sound, feel, seem, taste, and turn*. This distinction between a surface adjective and adverb cannot be maintained in Serbian. Moreover, the verb *izgledati* 'to look' in Serbian is not suitable for a base in a compound lexical item because of phonological restrictions, as in *\*dobro-izgleda(juč)-an* or the like, although the verb *to look* as in *good-looking* is very usable and productive for specific descriptions of qualities in English. Besides, it is not typical of Serbian to bring together two uncoordinated adjectives in a lexical construct, which is the case in model 28. The true relation between these elements in English can be viewed only by the formative-semantic model, stressing the positive sides of this approach once again.

## (31) ATTRIBUTE

*dark-looking hunter*

N <sub>m</sub>	[WH]	V	Adj
<i>hunter</i>	<i>who</i>	<i>look</i>	<i>dark</i>

On the one hand, the schematic representation is what makes the difference between model 13 and model 28 visible outright. On the other hand, the inherent matrix clause structure makes it clear that the adjunct in model 28 is an adjective with complement function, or in model 13 an adverbial modifier, thus rendering formations like *nice-sounding* and *fast-moving* possible words, whereas *\*clever-supporting* is not. Moreover, by introducing the **First Sister Principle**, Roeper and Siegel [1978: 208] suggest that “all verbal compounds are formed by incorporation of a word in first sister position of the verb” so that *life-supporting trees* is a possible compound, while *\*fast-supporting snow* is not (bearing in mind the sub-categorization frame of the verb *support*, which is [NP] ([Adv])).

The model is highly productive in English (though not with all linking verbs), and there are not many restrictions on first elements of adjective compounds, the second element commonly being *-looking*, *-sounding*, *-smelling*, *-tasting*, etc. as in: *bad-smelling*, *foul-smelling*, *funny-sounding*, *good-looking*, *nice-tasting*, *smart-looking*, *strange-looking*, *sweet-tasting*, etc. Sometimes derived forms can front compounds of this model, as in *agitated-sounding*, *cracked-sounding*, *dazed-looking*, *deformed-looking*, *dissipated-looking*, *worried-looking*, where passivisation could not be assumed.

## (32) ATTRIBUTE BENCHMARK

*red-hot plate*

N <sub>m</sub>	[WH]	V <sub>cop</sub>	Adj <sub>2</sub>	[COMPL]	N <sub>m</sub>	V <sub>cop</sub>	Adj <sub>1</sub>
<i>plate</i>	<i>which</i>	<i>be</i>	<i>hot</i>	<i>that</i>	<i>plate</i>	<i>be</i>	<i>red</i>

Some other English compounds formed upon the same model are: *giddy-swift*, *icy-cold*, *silky-soft*, *squeaky-clean*, *wet-fresh*, *white-hot*, etc.

## (33) BENCHMARK

*waist-high fence*

N <sub>m</sub>	[WH]	V <sub>cop</sub>	Adj <sub>1</sub>	[CMPR]	N	V <sub>cop</sub>	Adj <sub>2</sub>
<i>fence</i>	<i>which</i>	<i>be</i>	<i>high</i>	<i>as</i>	<i>waist</i>	<i>be</i>	<i>high</i>

Among other instances of this model the following can be listed: *countrywide*, *day-long*, *fort-night-long*, *knee-deep*, *life-long*, *nationwide*, *neck-deep*, *skin-deep*, *skin-tight*, *shoulder-high*, *waist-deep*, *world-wide*, etc. The nominal element serves the role of a benchmark or unit of measure used for reference.

MODELS 30—31. In situations when adverbial particles are involved in adjective composition, the surface forms are participial, but the basic structure of the matrix clause is the same in either case. The pre-posing of the particle based on the leftward movement of adjuncts to allow for feature-checking as proposed within a VP by Roeper [1999: 38] ensures a complex base for final suffixation and adjectivisation by *-ing* or *-ed*. Verbs that are engaged in these synthetic formations are intransitive in nature. The very fact that Serbian does not have semantic extensions in the form of adverbial particles accounts for the missing compound adjectives of this type. The latter of the two models implicates an unexpressed logical and clausal subject.

## (34) LOCATION/DIRECTION

*out-going child/bygone time*

N <sub>m</sub>	[WH]	V	Part
<i>child</i>	<i>who</i>	<i>go</i>	<i>out</i>
<i>time</i>	<i>which</i>	<i>go</i>	<i>by</i>

Additional compounds of the same type based on adverbial particles as first elements are: *in-coming*, *in-growing*, *off-putting*, *oncoming*, *on-going*, *out-leaping*, *outstanding*, *upblazing*, *up-brimming*, *up-coiling*, *up-peaking*, *up-steaming*, etc. Some of the last few examples on this list may serve as counter-arguments to the statement that particle incorporation is no longer productive in English compounding [Roeper, Siegel 1978: 234].

## (35) LOCATION/DIRECTION

*in-built device*

$N_m$	[WH <sub>case</sub> ]	[PRO]	V	Part
device	which	—	build	in

The model could be further exemplified by formations such as *downcast*, *downtrodden*, *inlaid*, *inborn*, *outcast*, *outstretched*, *overcast*, *overgrown*, *upturned*, etc.

MODEL 32. In the last model characteristic of English, the pronominal element in the first part of the compound is of agentive thematic role, while the predicate is compounded as the second part in its participial form. Even if an adaptable base could be formed from any Serbian pronoun, the meaning would not correspond to the form.

## (36) AGENT/EXPERIENCER

*all-admired politician*

$N_m$	[WH <sub>case</sub> ]	Pron	V
politician	whom	all	admire

Other examples are the following: *all-appalled*, *all-favoured*, *all-dreaded*, *all-enraged*, *all-praised*, *all-honoured*, *all-shunned*, etc.

As shown by the formation models and their volume, English possesses almost twice the potential of Serbian to turn constructions into compound lexemes via lexicalisation processes. Judging by the patterns present in English but non-existent in Serbian, two thirds of these are the models where composition bases source from lexical verbs (rather than the copula *to be*) such as the verbs *to build*, *to cut*, *to go*, *to look*, *to make*, *to sound*, *to taste*, etc., which are very frequent in English descriptive compounds. This very fact is the main reason for the discrepancy in the potential of English and Serbian to lexicalize phrasal and clausal structure.

## 2.2.2. Formation-semantic models of adjective compounds in Serbian

The traditional classification of Serbian adjective compounds into proper compounds and compound-derivative adjectives [Babić 1986; Stevanović 1991; Klajn 2002; Štasni 2008] can be easily seen in the following subsections, which concern models that are characteristic of Serbian in contrast to English.

MODEL 33. A model that is missing in English lexeme formation shows the phrasal complement structure of the matrix clause lexicalized into a compound. The phrasal structure in question is a prepositional phrase. The preposition and its object form a compound base to which a derivational suffix is added indicating definiteness and lexical category. These semantic structures are expressed by means of a well-developed derivational affixation system in the English language.

## (37) SOURCE/TARGET

*bezimeni lik*

$N_m$	[WH]	V <sub>cop</sub>	[PREP]	N
lik	koji	biti	bez	imena
character	who	be	without	name
'nameless character'				

There are many examples of compounds classified here: *bez-alkohol-an* (without-alcohol-DAF), *bez-atom-ski* (without-atom-DAF), *bez-boj-an* (without-colour-DAF), *bez-bol-an* (without-pain-DAF), *bez-vod-an* (without-water-DAF), *bez-glav* (without-head-Ø), *bez-gotovin-ski* (without-cash-DAF), *bez-greš-an* (without-sin-DAF), *bez-drvo-an* (without-wood-DAF), *bez-idej-an* (without-idea-DAF), *bez-izgled-an* (without-prospect-DAF), *bez-mes-an* (without-meat-DAF), *bez-rep* (without-tail-Ø), *bez-zub* (without-tooth-Ø), *bez-ukusan* (without-taste-DAF), *bez-um-an* (without-mind-DAF), etc.

MODEL 34. The difference between English and Serbian in the last two models originates from the fact that Serbian allows N-N compound bases stemming either from noun compounds or noun phrases to be suffixed with adjective-forming suffixes *-an*, as in *sredovečan* 'middle-aged', or *-ski*, as in the eponymical formations like *donkihotovski* 'of/about Don Quixote'. These are treated as adjective compounds, and only after this type of adjectivisation would the items be

capable of assuming attributive functions. In English, on the other hand, compound nouns and noun phrases can appear in adjectival positions with no change in their form. As this investigation includes only adjective compounds proper, these English compounds will not concern us here.<sup>11</sup> A variation of this model implicates an underlying coordination of two nominals, where the coordinator is normally not on the surface, as opposed to the English phrasal *day-and-night* and the like.

- (38) SOURCE/LOCATION/TARGET *brakorazvodna parnica*
- | $N_m$                        | [WH]        | $V_{cop}$   | [PREP]     | NP                  |
|------------------------------|-------------|-------------|------------|---------------------|
| <i>parnica</i>               | <i>koja</i> | <i>biti</i> | <i>oko</i> | <i>razvod braka</i> |
| lawsuit                      | which       | be          | about      | divorce marriage    |
| 'a marriage divorce lawsuit' |             |             |            |                     |
- (39) SOURCE/LOCATION/TARGET *danonoćna pretnja*
- | $N_m$                    | [WH]        | $V_{cop}$   | [PREP]    | $N_1$      | [COORD]  | $N_2$      |
|--------------------------|-------------|-------------|-----------|------------|----------|------------|
| <i>pretnja</i>           | <i>koja</i> | <i>biti</i> | <i>po</i> | <i>dan</i> | <i>i</i> | <i>noć</i> |
| threat                   | which       | be          | during    | day        | and      | night      |
| 'a day-and-night threat' |             |             |           |            |          |            |

In Serbian, there are many compound adjectives like this: *brat-o-ubi-la-čki* (brother-INTF-kill-DAF-DAF), *narodn-o-oslobodi-la-čki* (people-INTF-liberation-DAF-DAF), *polj-o-privred-n-i* (field-INTF-economy-DAF-IAF), *vatr-o-sigur-nos-n-i* (fire-INTF-secure-DAF-IAF). Some compounds derived from proper nouns and names are: *banja-luč-ki* (Banja-Luka-DAF), *don-žuan-ski* (Don-Juan-DAF), *franc-jozef-ov-ski* (Franz-Joseph-IAF-DAF), *šar-planin-ski* (Šara-mountain-DAF), etc.

Thus, judging by the look at the patterns, what prevents a more extensive compound-adjective formation in Serbian is the disinclination to incorporate lexical verb bases. On the other hand, both of the models that are present in Serbian and missing in English are based on the copulative verb in the matrix clause, and they uniformly involve nominal bases. This signals that the Serbian-only patterns are due to the fact that the mentioned arrangement of elements in the compound base is possible owing to the extensive employment of the interfix morpheme *-o-* or *-e-* as well as a rich system of inflectional suffixes, which allows for different relations between the elements, particularly nominal, to be established and thereby enhances the combinatorial possibility of the nominal elements in compounding. Moreover, Serbian adjectivisation relies on derivational suffixation at a level much higher than seen in English, which may present another factor in the occurrence of the compounding models not typical for English. Among other things, this is the primary force that shaped the structural tendencies within the process in Serbian, which is basically regarded more as combined compounding and derivation, rather than compounding in its own right.<sup>12</sup>

### 3. Conclusions

This investigation resulted in postulating 34 different formative-semantic models of adjective compounds in English and Serbian. 15 models pertained specifically to English and 2 were recorded only in Serbian. The part that presented the shared capacity and thus the similarity between these languages consisted of 17 formative patterns. Moreover, it should be pointed out that the process of compounding adjectives in English and Serbian is relatively dissimilar, with a considerable common core which amounts to 50% of all potential patterns in the two languages. Generally speaking, both languages appear to be prone to lexicalisation of any higher-order structures

<sup>11</sup> In Serbian linguistic literature, a distinction has been maintained between composition proper (two bases put together in a word) as in *plavo-kosa* 'blond-haired' and combined word-formation (combined compounding and derivation) as in *bez-briž-an* 'carefree'; see [Stanojčić et al. 1989: 123].

<sup>12</sup> Treating compounding as different from composition-derivation has been the main trend in the Serbian word-formation literature, as could be verified in [Babić 1986; Stevanović 1991; Klajn 2002; Štasni 2008] and elsewhere.

that are indicative of coordinated quality, adverbially-modified quality of action, and the action that incorporates its object into adjective compounds. A very common feature is the ability to form compounds out of certain basic matrix clause types, e.g. patterning as N LV Adj or any comparison structures based on parameters set by nominals.

It can be inferred from the quantification within the research that the formative capacity of Serbian composition is much narrower than that of English. This could indicate that adjective compound formation in synthetic languages such as Serbian is conditioned by the morphemic complexity of the input elements. Furthermore, synthetic languages are much more affected by concomitant suffixation, and lexical compounding cannot occur without adjective forming suffixes *-an*, *-ski*, or *-Ø*. On the other hand, in English, even though present to a certain degree, the suffixation which takes place simultaneously or immediately following the compound-base formation is comparatively limited and involves primarily the participial endings or the derivational *-ed* or *-ing* with synthetic compounds.

Comparing the superficial structure of adjective compounds in English and Serbian, one could reach a wrong conclusion that compound constituents and compound structure are similar to a much higher degree than is actually the case. Even though lexical categories involved in the composition are generally the same, lexical combination within the compound base need not match corresponding items of English and Serbian, as was demonstrated by the actual formative-semantic models. Regarding the lexical category or word class of the constituents, these belong with adjectives, nouns, adverbs, prepositions, numerals, participles, and pronouns. However, in this respect, it can be generalized that adjective compounds in Serbian almost never have a verbal base in the first constituent of the compound unless this verb is in the form of the imperative mood,<sup>13</sup> or within the highly complex model 6 based on *vrtoqlav* and model 4 with a limited number of registered examples, some of the more curious being *vijoglav* ‘head-shaking’ or *vrlijook* ‘casting the eyes at odd angles’. Pure verb bases and verbal forms other than non-finites are also not found in the second constituent.

The next generalisation that could be drawn here is that the presence of lexical verbs as bases for adjective-compound formation is much more prominent in English than in Serbian, potentially the key difference in adjective lexeme formation of the languages. Of the 32 models in English, 18 comprise a lexical verb in the surface structure, while 14 entail the covert copulative verb. This makes 56% of the cases, whereas in Serbian this ratio is 7 out of 19 models, i.e. around 36%. These numbers again point out that Serbian is typically less inclined toward incorporating verb-based elements in adjective composition than English. On the other hand, this may emphasise the strong semantic import within English adjective compounding, as verb-form incorporation may invoke more significant lexical and expressive precision. According to Scalise [1986: 90], “non-primary compounds, called synthetic compounds or verbal nexus compounds, such as *truck driver*, *snow removal*, in fact, contain a verbal form which usually determines unequivocally the meaning of the compound, thus ruling out other readings.” Another general deduction coming from the results of the analysis regarding English is that the language allows for conjunctions in the formation of adjectival compounds, whereas these are not found in the Serbian language. In English, aside from its inherent capacity to form phrasal compound adjectives productively, as opposed to Serbian, it is possible to include conjunctions such as *and* or *but* in compound adjectival structures. This means that, aside from interjections and articles, bases from all lexical and functional categories are liable to composition in the formation of adjective compounds.

The models presented in this paper and the method of analysis could serve the purpose of bringing other languages into closer contact when it comes to analysing compound lexical structure, while the findings might open the prospect of further research in different languages.

<sup>13</sup> The assertion was introduced by Rammelmeyer [1975] and relayed by Klajn [2002: 18]. It can be confirmed here by the pattern based on the first element *nazovi*- ‘call-it’ in model 8.

## ABBREVIATIONS

3	— 3 <sup>rd</sup> person	LV	— linking verb
ACC	— accusative case	N	— nominal element
Adj	— adjective	N <sub>m</sub>	— head-noun modified
Adv	— adverb	Num	— numeral
[CMPR]	— comparative relation slot	Part	— particle
[COMPL]	— complementizer slot	[PREP]	— prepositional case relation slot
[COORD]	— coordination relation slot	PRS	— present tense
DAF	— derivational affix	Pron	— pronoun
DAT	— dative case	[PRO]	— pronominal slot
DEF	— definiteness	SG	— singular
GEN	— genitive case	V	— verbal element
IAF	— inflectional affix	V <sub>cop</sub>	— copulative/linking verb
IMP	— imperative	V <sub>ed</sub>	— passive/past participle verb
INS	— instrumental case	[WH]	— relative pronoun slot
INTF	— interfix		

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