

Nataša Milićević
Tanja Milićev

AGREEMENT AND ATTRACTION ERRORS IN RELATIVE CLAUSES IN SERBIAN

In this paper we present an analysis of agreement errors from an elicited speech production experiment in Serbian. We classify the type of errors encountered and identify the semantic effects that lead to them. Given their nature we argue that many of them could not be viewed as attraction errors in traditional terms, since they may be a consequence of syntactic and semantic priming related to the material in the model sentence. The unexpected low rate of gender agreement errors compared to number agreement errors in the same context informs us about the way theory should (re)address the problem of gender agreement in the future as well as what hypotheses could guide our experimental designs when exploring attraction errors.

Key words: agreement, linearity, attraction, speech production.

У овом раду представљена је анализа грешака добијених у експерименту језичке продукције на српском језику. Предложена је подела типова грешака и идентификовани су семантички ефекти који их узрокују. С обзиром на њихову природу, наша тврдња је да многе од ових грешака не можемо посматрати као грешке привлачења у традиционалном смислу, већ као последицу синтаксичког и семантичког прајминга везаног за контекст који претходи продукцији (реченицу-модел). Неочекивано низак број грешака у роду у односу на број грешака у броју у истом окружењу упућује на начин на који би теорија убудуће требало да посматра проблем слагања у роду, као и на нове хипотезе које би могле да буду окосница експерименталног дизајна у истраживању грешака привлачења.

Кључне речи: конгруенција, линеарност, привлачење, говорна продукција.

1. INTRODUCTION. It is an important assumption of generative syntax that syntactic operations are structure dependent in that they are determined by the hierarchical relations of the constituents in the syntactic tree. Thus, agreement between the subject of a clause and the verb is not affected by their linear order but stems from the c-command relation established between them (CHOMSKY 2000). This has been robustly supported by the cross-linguistic data. However, agreement of the verb with two coordinated noun phrases (NPs) in the subject position, which exhibit mixed features, remains a challenge for the existing (generative and non-generative) approaches to agreement, particularly for languages such as Serbian with both gender and number features encoded on the noun (for a detailed overview of the literature see МИТИЋ 2019). Examples (1) and (2) illustrate the problem.

- (1) a. Molbe i uputstva su overeni pečatom.
requests.F.PL and instructions.N.PL are authenticated.M.PL seal.INST
b. Molbe i uputstva su overene/overena pečatom.
requests.F.PL and instructions.N.PL are authenticated.F.PL / authenti-
cated.N.PL seal.INST
- (2) a. Pečatom su overeni molbe i uputstva.
seal.INST are authenticated.M.PL requests.F.PL and instructions.N.PL

- b. Pečatom su overene/*overena molbe i uputstva.
 seal.INST are authenticated.F.PL / authenticated.N.PL requests.F.PL and
 instructions.N.PL

The default masculine agreement on the verb illustrated in (1a and 2a) is grammatical rule that resolves the gender agreement conflict we find between two conjuncts, regardless of whether the coordinated subject constituent precedes or follows the verb. However, speakers of Serbian apply other strategies as well, and produce agreement patterns with single conjunct agreement in gender (1b and 2b). The only restriction is that the second conjunct agreement is not an option with the VS order. The varieties of single conjunct agreement are best summarized by Corbet (1983; 1991) in Serbo-Croatian and Slovenian, and various syntactic accounts of this phenomenon have emerged more recently (Bošković 2009; Marušić et al. 2007; 2015). In all of them, the main conclusion is that agreement in gender features is a distinct process, which could involve linear feature matching. Having in mind that the data different researchers rely on may be substantially different, in Willer-Gold et al. 2016, 2018 we conducted an experimental study for Western South Slavic languages (Bosnian/Croatian/Serbian and Slovenian), which provides a reliable set of data, collected using the same methodology at six different sites simultaneously. The study consisted of two experiments, one of elicited production, the other of comprehension/judgment task.¹ This allowed us to claim that the patterns illustrated in (1) and (2) are indeed robustly attested and formulate the hierarchy vs. linearity problem. The results did not significantly differ across sites, and the linear choice for gender agreement is strongly favored in the VS order. In other words, the acceptable agreement illustrated in (2b) is a much more common choice than the default masculine plural. This is so because with this word order, both the hierarchical and linear choice of agreement favor agreement with the first conjunct agreement, i.e., the first conjunct is both the highest and the closest constituent to the verb.

The experimental study presented here was conducted simultaneously with Willer-Gold et al. 2016 at the University of Novi Sad, with native speakers of Serbian from the region of Vojvodina. Our focus were sentences containing complex subjects with relative clauses, that can typically lead to so-called attraction errors, since in this context a more deeply embedded NP is linearly closer to the verb and induces accidental feature matching with the verb. Our goal was to establish if the attraction errors do occur in this context in Serbian and the extent to which this happens. Within the larger study described in Willer-Gold et al. 2016, our findings were used to clearly differentiate between linear agreement in this language and agreement errors. To be more precise, since the average rate of such errors in attraction error studies is around 13%, a clear statistical difference would show that we are talking about two different phenomena.

There are two important reasons for the discussion of attraction errors. Firstly, it is necessary to point out that apart from the statistical difference between erroneous and closest conjunct agreement, a proper understanding of their occurrence is necessary in a theory of syntactic agreement. Secondly, we need to re-examine

¹ We refer the reader to the cited work for the details regarding the experimental design and methodology.

the assumption that errors in agreement occurring in our experimental studies are indeed attraction errors (as the literature currently defines them). This becomes particularly challenging once we assume that linearity plays a prominent role in gender agreement, as seems to be the case at this point. One possible implication is that gender attraction errors would be co-related with the linear proximity of the attractor to the verb, and that this condition would be more relevant to errors in gender than to those in number. It could also be the case that they occur at a higher rate than the attraction errors of any kind generally in language production. The other reasonable assumption, given the nature of the experimental design, would be that it is indeed the intervening noun that triggers the error and is therefore a true attraction error. Our analysis here shows that probably neither of these assumptions is true.

2. THE PHENOMENON OF ATTRACTION. In English, it has long been noted that number agreement errors, both in speech production and edited texts, can occur in context such as (3).

(3) The key to the cabinets are rusty. (BOCK – MILLER 1991)

In (3), the plural NP *the cabinets* intervenes between the singular NP *the key* and triggers erroneous plural agreement with the verb. In earlier studies it is viewed as ‘proximity concord’ – being linearly closer to the verb, the intervening noun ‘attracts’ agreement (cf. WAGERS 2008 for an overview of the literature).

Once the phenomenon attracted attention in experimental research on production, especially following Bock and Miller’s (1991) seminal work, it has been revealed that attraction is triggered by several factors that go beyond pure linear proximity.

In addition to the context in (3), agreement attraction errors are also found in relative clauses, albeit at a smaller rate in comparison to PP interveners. Even though the NP *the history book* in (4a) and (4b) are equally close to the verb, Bock and Cutting’s (1992) production experiments show that attraction errors are more frequent with (5a) than (5b).

(4) a. The editor of the history books were (...)
b. The editor who rejected the history books were (...) (BOCK – CUTTING 1992)

Bock and Cutting argue that the different error rates for prepositional phrase and relative clause modifiers is due to the fact that the intervener noun inside the relative clause is not in the same clause as the head noun, unlike the intervener/local noun in the prepositional phrase. As the clause is the encoding unit in production, the clausal boundary in (4b) reduces the chance of an agreement error because it is not encoded simultaneously with the head noun, which is not the case with PPs.

Another production study that confirms the role of syntactic rather than linear proximity is VIGLIOCCO – NICOL 2002, showing attraction errors are equally possible when the attractor and the verb are linearly proximal and when they are linearly separated.

(5) a. The helicopter for the flights are safe.
b. Are the helicopter for the flights safe?

Franck et al. (2002) further show the crucial factor in agreement error production is the position of the potentially interfering local noun in the hierarchical structure of the sentence, before it is linearized. Referring to Bock and Cutting's analysis, they argue the presence of a clause boundary does not completely insulate the matrix clause from the embedded (relative) clause but it creates a longer syntactic path from the mismatching noun to the head noun. The role of the hierarchical distance is confirmed in their experiment showing that when the subject contains two PP modifier ('The inscription on the door(s) of the toilet(s)'), a plural noun inside the first/medial PP led to more attraction errors than the most embedded one.

In addition to these syntactic properties, other factors have been discovered to contribute to attraction. One is the so-called semantic relatedness/integrity between two NPs (SOLOMON – PEARLMUTTER 2004) illustrated below. As *yummy toppings* is in a locational relation with *pizza*, while *tasty beverages* are not, (6a) will show more attraction.

- (6) a. The pizza with the yummy toppings (more attraction).
 b. The pizza with tasty beverages.

Another type of semantic effect is that of distributivity (EBERHARD et al. 2005, a.o.). Unlike example (7a), (7b) gives rise to a mental representation which leads to the possible plural interpretation of the noun *label*, as it is obvious it is not referring to a single object. Thus, the latter example could give rise to the accidental plural marking on the following verb.

- (7) a. The baby on the blanket.
 b. The label on the bottles.

In addition to these, another established factor is that of markedness. With number, markedness is related to morphological complexity (singular is unmarked, whereas plural is expressed with a suffix). This is correlated with cognitive complexity too. Eberhard et al. (2005) found that, on average, plural attractors elicit plural agreement on the verb 13% of the time. In contrast, singular attractors elicit erroneous singular agreement only 3% of the time). The plural markedness generalization has been attested in many languages, including ones that are morphologically rich.

In Slavic languages, of the three possible genders, neuter is considered least morphologically marked, which that neuter singular head of the relative clause would provide a perfect context for more instances of agreement with the attractor in the masculine and feminine. This has been confirmed in Badecker and Kuminiak's (2007) production study on Slovak, which showed that most attraction errors were produced when the head was neuter and the local noun/attractor masculine. Similar findings for neuter heads have been observed for number agreement errors in Russian (cf. MALKO – SLIOUSSAR 2013: 173). However, one fixed markedness hierarchy of the type established for number features (sg > pl) does not seem to hold for gender agreement errors; rather, as Badecker and Kuminiak propose, markedness works in pairs (N < M, N < F, M < F) (cf. also SLIOUSSAR – MALKO 2016 for Russian).

3. **ATTRACTION IN SERBIAN – PRODUCTION STUDY EVIDENCE.** Unlike English, for example, the phenomenon of attraction, to the best of our knowledge, is not recorded in descriptive grammars of Serbian. In order to establish if and how attraction occurs in Serbian, we conducted a production study, aimed at eliciting such errors. The experiment involved 30 participants, all native speakers of Serbian, from the region of Vojvodina, first year students of the University of Novi Sad (mean age = 18.65; sex: F = 65%, M = 35%), who were not pursuing a university degree in the study of the local language. Their participation was voluntary. The experiment was carried out in two separate sessions (two weeks apart), to minimize extralinguistic factors on production (strained attention and tiredness). The participants were closely monitored by two supervisors. Their attention was further checked by a number of comprehension questions, which were part of the experiment.

In each session, speakers were exposed to 108 items, out of which 18 were experimental stimuli; others were fillers containing simple or coordinated subject NPs. Each stimulus consisted of a model sentence (MS), which contained the predicate the speakers were instructed to use in the subsequent production of the target sentence (TS). Each TS contained a complex NP subject modified by a relative clause (RC) with a potential agreement attractor, as illustrated in (8), (the list of all stimuli is given in Appendix 1).

- (8) MS: Balvani *su bačeni na hrpu*.
 logs_{-MPL} aux_{-PL} thrown_{-MPL} on pile
 ‘The logs were thrown on the pile.’
 TS: Stablo [koje su posekli ljudi]_{RC}
 tree-trunk_{-NOM,NSG} which_{-ACC,NSG} aux_{-PL} cut_{-MPL} people_{-NOM-MPL}
 ‘The tree-trunk which the people cut.’

The make-up of MS in the experiment was uniform: subject – auxiliary – participle – PP adjunct. Each MS contained five words.² The only variation in the MSs was the number and gender features of the subject. Each feature combination is represented by three examples, which gives the total of 18 MS+RC items. All subject NPs in MS were inanimate. All predicates contained unaccusative verbs. TS always had the head NP in [n-sg] and the local noun/attractor (the subject of the RC) in [m-pl]. The word order inside the RC is always the same: accusative relative pronoun – auxiliary clitic – participle – NP subject. This word order is information-structurally unmarked for this type of RC (preverbal subjects would produce contrastive focus on the predicate).

The choice of having only the pattern with a [n-sg] head and [m-pl] attractor deserves some comment. Recall from Section 2 that attraction is asymmetric – more number agreement errors will occur when the head is [sg] and the attractor is [pl], than in the opposite direction (the markedness effect). In three-way gender languages, neuter has been identified as the least marked and experimentally shown to lead to most attraction. Based on these findings, the combination of the [n-sg] head and the [m-pl] local noun was given a very solid chance of triggering

² The length in characters with spaces ranged from 27 to 41 (cf. Appendix 1), which we find to be an acceptable variation, given that the exact nature of the role of character number on language production (repetition) has not yet been explicated.

attraction effects. Giving attraction in South Slavic the best possible chance is not a trivial matter as the phenomenon of attraction in the most prominent example of agreement attraction (complex singular subjects that contain a PP complement or adjunct with a plural NP subconstituent) has not yet been recorded in any production study (cf. for instance, MARUŠIĆ et al. 2015 for the absence of attraction with PPs in Slovenian). Although Ristić et al. (2016), report that in their comprehension experiments (naturalness judgment task and forced choice grammaticality judgment), Serbian speakers allow number agreement mismatches in the configuration ‘modified head + PP’, their results are not fully conclusive. Furthermore, as the authors themselves note, these findings need to be confirmed by production paradigms.

The number and gender variation present only in MSs served the purpose of examining the potential effects of priming. The role of priming on attraction is still largely understudied. It is plausible to expect that the semantic and morphological factors noted locally (between the head and the attractor) could be detected in the preceding context as well; however, very little research has been done in such a way.³ Given the novelty in this design, no specific predictions could be made, other than that priming could play a role in incidences of attraction.

3.1. TYPES OF AGREEMENT ERRORS IN TARGET SENTENCES WITH RELATIVE CLAUSES. In this subsection we present the types of agreement errors/attraction we have found in our dataset. We classify them all as instances of attraction because in all of them the agreement error can plausibly be related to the configuration with an intervener/attractor.

As all our TSs contain complex predicates of the AUX-PARTICIPLE form (past or ‘perfect’ tense in Serbian), and given that auxiliaries show number agreement, while participles show number and gender agreement, attraction errors are varied.⁴ Each type is described and illustrated below.⁵

Full attraction refers to the productions where both the auxiliary clitic and the participle agree with the attractor (RC subject). In such cases, the auxiliary clitic shows [pl] agreement and the participle is marked for [pl] and [m] (9).

- (9) a. Putovanje koje su osmislili vođiči su otkazani zbog nevremena.
 trip_{.NSG} which aux designed guides_{.MPL} aux_{.PL} canceled_{.MPL} because-of weather
 ‘The trip which the travel guides designed were canceled because of the weather.’

(NSMAK30) (MS: *dvoboj* ‘duel’, Msg)

- b. Tržište koje su vodili menadžeri su propali zbog nemara.
 market_{.NSG} which aux run managers_{.MPL} aux_{.PL} crashed_{.MPL} because-of negligence
 ‘The market which the managers ran crashed because of negligence.’

(NSFSR03) (MS: *fabrika* ‘factory’, Fsg)

³ Although see the study in HASKELL et al. 2010, which shows that, in English, previous experience to plural agreement increases attraction errors in the singular-plural configuration, while exposure to singular agreement has no significant effect on attraction in the plural-singular configuration.

⁴ For similar attraction errors see FUCHS et al. 2015.

⁵ Each example is provided by the code of the participant(s) who produced the sentence, as well as the lexical and grammatical information about the subject in the model sentence.

- c. Pismo koje su poslali obožavaoci su stavljeni u fioku.
 letter._{NSG} which aux sent fans._{MPL} aux._{PL} put._{MPL} in drawer
 ‘The letter which the fans sent were put in the/a drawer.’
 (NSMOV31) (MS: *ogledalo* ‘mirror’, Nsg)

Number only attraction are cases where the auxiliary verb and the participle show up with [pl] agreement, while gender features of the participle match those of the head.

- (10) Pitanje koje su postavili slušaoci su puštena na radiju.
 question._{NSG} which aux posed listeners._{MPL} aux._{PL} played._{NPL} on radio
 ‘The question which the listeners asked were played on the radio.’
 (NSMSG28; NSMAK30) (MS: *reklama* ‘commercial’, Fsg)

We also note a case where the participle shows [f] agreement, which we label as *ghost attraction* because there is no [f] attractor in the attraction domain. Note though that despite the curious gender features on the participles, the [pl] features on both the auxiliary and the participle in principle still qualify (12) as an attraction error.

- (11) Ispitivanje koje su sprovodili psiholozi su objavljene u časopisu.
 experiment._{NSG} which conducted psychologists._{MPL} aux._{PL} published._{FPL} in journal
 ‘The research experiment which the psychologists conducted were published in a journal.’
 (NSMOV31) (MS: *istraživanja* ‘research’, Npl)

A number of productions with attraction errors contain corrections. Such corrections come in two types: (i) *attraction correction* and (ii) *hypercorrection due to attraction*. In the first type, speakers produce [pl] agreement on the auxiliary (make a partial, number attraction error), but then correct themselves to [sg] agreement on the auxiliary followed by [n-sg] agreement on the participle. Hesitation between the two types of agreement can persist, as illustrated by (12c), where the speaker produces both [pl] and [sg] form of the auxiliary, even after repeating the complex subject NP.

- (12) a. Drvo koje su posadili gorani su... je istrunulo pod snegom.
 tree._{NSG} which aux planted scouts._{MPL} aux._{PL} aux._{SG} rotted._{NSG} under snow
 ‘The tree which the scouts planted rotted under the snow.’
 (NSFND16; NSFLC11) (MS: *grane* ‘branches’, Fsg)
- b. Ispitivanje koje su sprovodili psiholozi su... je objavljeno u časopisu.
 experiment._{NSG} which conducted psychologists._{MPL} aux._{SG} aux._{PL} published._{FPL} in journal
 ‘The research experiment which the psychologists conducted were published in a journal.’
 (NSMMB27; NSMPK24; NSMSG28) (MS: *istraživanja* ‘research’, Npl)
- c. Ispitivanje koje su sprovodili psiholozi su ... je ... Ispitivanje koje su
 experiment._{NSG} which conducted psychologists._{MPL} aux._{PL} aux._{SG} experiment._{NSG} which
 sprovodili psiholozi su ... je objavljeno u časopisu.
 conducted psychologists._{MPL} aux._{PL} aux._{SG} published._{NSG} in journal
 ‘The research experiment which the psychologists conducted were published in a journal.’
 (NSMAK30) (MS: *istraživanja* ‘research’, Npl)

Hypercorrection due to attraction are productions where the speakers first produce agreement with the head NP, but then ‘correct’ themselves to [pl] agreement with the attractor NP, as in (14a), or they produce the auxiliary with [pl] agreement and the participle with [n-sg] agreement, which then they ‘correct’ to [pl] as well. No hypercorrection to full attraction pattern has been noted.

- (13) a. Obećanje koje su dali doktori je prekršeno... su prekršena.
 promise-_{NSG} which aux given doctors-_{MPL} aux-_{SG} broken-_{NSG} aux-_{PL} broken-_{NPL}
 ‘The promise which the doctors gave was broken... were broken.’
 (NSMSS21) (MS: *zakletva* ‘oath’, Fsg)
- b. Pismo koje su poslali obožavaoci su stavljeno... stavljena... u fioku..hm.
 letter-_{NSG} which aux sent fans-_{MPL} aux-_{PL} put-_{NSG} put-_{NPL} in drawer hmm
 ‘The letter which the fans sent were put in the drawer.’
 (NSMSG28) (MS: *ogledalo* ‘mirror’, Nsg)

The types of agreement errors are summarized and quantified in Table 1.

Table 1. Types of agreement errors in the target sentences with RCs.

		No.	%
‘Full’ (number and gender) attraction	AUX _{PL} PTC _{MPL}	11	39.2%
Number only attraction	AUX _{PL} PTC _{NPL}	5	17.8%
Attraction correction	AUX _{PL} ... AUX _{SG} PTC _{NSG}	9	32.1%
‘Ghost’ attraction	AUX _{PL} PTC _{FPL}	1	3.6%
Hypercorrection due to attraction	AUX _{SG} PTC _{NSG} ... AUX _{PL} PTC _{NPL}	2	7.1%

In summation, out of 1080 produced items, 28 contained agreement errors, which makes 2.59% of the entire production of the sentences with RC. This is a rather low rate, especially compared to English (Bock and Cutting (1992) note 11%, and Solomon and Perlmutter (2007) 10% for plural attraction errors with RCs). Still, the data confirm that speakers of Serbian do produce attraction errors with complex NPs containing RC.

3.2. SEMANTIC EFFECTS ON ATTRACTION. Semantic factors on attraction noted in the literature can also be observed in our data. Distributivity plays a role, and in our data, it is the lack of distributive reading that seems to have prompted some of the participants to produce [pl] agreement. Consider (14). The sentence with the [n-sg] agreement with the head *pismo* ‘letter’ and the RC subject *obožavaoci* ‘fans’, only allows non-distributive reading where one specific letter was sent by at least two fans. For some speakers, this reading does not match a more likely situation where fans send letters individually rather than a group, the desired ‘plurality’ of letters could be seen as a factor influencing [pl] agreement.

- (14) a. Pismo koje su poslali obožavaoci su stavljani u fioku. (NSMOV31)
 letter-_{NSG} which aux sent fans-_{MPL} aux-_{PL} put-_{MPL} in drawer
- b. Pismo koje su poslali obožavaoci su stavljeno...stavljena...u fioku..hm.
 (NSMSG28)
 letter-_{NSG} which aux sent fans-_{MPL} aux-_{PL} put-_{NSG} put-_{NPL} in drawer

A similar situation is illustrated in (15). Doctors more often have different one-to-one interaction with patients, and as shown in (15), this prompted hypercorrection.

- (15) Obećanje koje su dali doktori je prekršeno... su prekršena. (NSMSS21)
 promise.NSG which aux given doctors.MPL aux.SG broken.NSG aux.PL broken.MPL

Distributivity (or lack of it) could be identified as a factor in (16) as well. As the distributive reading is difficult to obtain between the [sg] *pitanje* ‘question’ and the [pl] *slušaoci* ‘listeners’, and as radio listeners are not likely to ask the same question, the [pl] agreement error could be motivated by this concern.

- (16) Pitanje koje su postavili slušaoci su puštena na radiju. (NSMSG28) (NSMAK30)
 question.NSG which aux posed listeners.MPL aux.PL played.NPL on radio

3.3. PRIMING AND INTERFERENCE EFFECTS. Having the TSs of a uniform makeup ([nsg] head, [mpl] attractor) allowed us to notice certain relations between the properties of MS and the occurrence of attraction in TS. Given that speakers are first exposed to MS, the linguistic forms in them can unconsciously affect the speaker’s subsequent language production. In other words, we could expect some sort of syntactic or lexical/semantic priming effects.

On the face of it, it appears that the MS’s number and gender features relate to the likelihood of producing agreement errors in the TS. For instance, [n-pl] and [f-sg] in the MS induced more errors (11 and 8, respectively) compared to other agreement features ([m-sg]: 3; [m-pl]: 0; [f-pl]: 4; [n-sg]: 2; see Appendix 2). The influence of agreement features in MS could be possibly treated as syntactic priming (BOCK 1986). In naturally occurring and experimentally elicited language production, speakers tend to repeat syntactic structure due to the syntactic priming; namely, the act of processing an utterance with a particular form facilitates processing a subsequent utterance with the same or a related form (cf. PICKERING – BRANINGEN 1999 for a review). It is relatively easy to imagine a scenario where having a [pl] auxiliary and a [n-pl] participle in the predicate of the MS, which the speakers are required to use in the production of the TS, can prime agreement attraction. What is interesting is that the same effect can be noted for [f-sg] MSs, where the participle is syncretic to [n-pl]. While the influence of syncretism has been recognized for both attraction (SLIOUSSAR 2018) and last conjunct agreement (MITIĆ–ARSENIJEVIĆ 2019), it is not immediately clear how it works in the context of priming. Furthermore, if the correlation noted between number and agreement features in MS is indeed a syntactic priming effect, its influence on the production of attraction is not direct. In our data, none of the [m-pl] MS was tied to erroneous production. If syntactic priming were solely responsible for agreement errors, then [m-pl] predicates in MS would be expected to cause most agreement with [m-pl] subjects in TS, contrary to the fact.

Finally, possible semantic intervention effects could also be noted. Certain semantic relations between the subject in the MS and the subject in the TS are illustrated in (18) and (19). The part-whole relationship between the subject *grane* ‘branches’ in the MS and the subject/head *drvo* ‘tree’ in the TS could have also influenced the production of two instances of partial [pl] agreement ([pl] auxiliary) in (17).

- (17) MS: Grane.FPL su.PL istrulile.FPL pod snegom.
 ‘The branches (have) rotted under the snow.’
 Drvo koje su posadili gorani su... je istrunulo pod snegom.
 tree.NSG which aux planted scouts.MPL aux.PL aux.SG rotted.NSG under snow
 (NSFND16) (NSFLC11)

The subject of MS can be semantically related to the attractor in TS. In (18), the subject *selo* ‘village’ in the MS is highly likely to have enhanced the prominence of the RC’s clause subject *seljaci* ‘villagers’ as the attractor in the TS.

- (18) MS: Sela_{.NPL} su_{.PL} izbrisana_{.NPL} s karte.
 ‘The villages were erased from the map.’
 Polje koje su obradili seljaci su ... je izbrisano s karte.
 field_{.NSG} which aux cultivated villagers_{.MPL}aux_{.PL}[pause] aux_{.SG} erased_{.NPL} from
 map
 (NSMMK25) (NSMSG28) (NSMAK30)

The MS-TS pair that caused most attraction errors (seven) of various types is (20). While the relation between the head *ispitivanje* ‘research experiment/study’ and the attractor *psiholozi* ‘psychologists’ may be argued to require distributive reading (we can easily imagine that our participants are unfamiliar with the fact that most psychological research experiments/studies is done in teams), it is more likely that the [p] features of the near synonym *istraživanja* ‘research’ in the MS are repeated in the TS.

- (19) MS: Istraživanja_{.NPL}su_{.PL} objavljena_{.NPL} u časopisu
 ‘The research experiment/study were published in a journal’
 Ispitivanje koje su sprovodili psiholozi ____
 experiment_{.NSG} which aux conducted psychologists_{.MPL}
 ____su objavljena [missing] (NSMSS21)/...su...obavljena NA ČASU (NSMMK25)
 aux_{.PL} published_{.NPL} [-]/...PAUSE aux_{.PL} ...PAUSE published_{.NPL} in class

4. DISCUSSION. The data from our experiment confirms that attraction-type errors occur in production in Serbian. As our TSs lack variation in the number and gender features of the head and the attractor, the findings are not very informative on how combinations of agreement features in the attraction domain trigger such agreement errors. That was clearly not the aim of the experiment, nor is it our aim here. Our contribution to the study of attraction is indirect and in terms of observations what factors facilitate it.

As expected, semantic factors were at play.⁶ Among them, distributivity seems to be quite relevant, but also semantic relatedness of other types. We also observe an effect not discussed/present in other studies – the influence of the material in model sentences and formulation of it in terms of priming. The observed correlation between gender/agreement features of MS and production of attraction errors, however, is too elusive, and before it is backed up by larger scale data, no firm generalizations about a possible algorithm for how gender/agreement (even in syncretic forms) trigger/prime attraction-type errors. Also, if the effect is indeed real, it should be investigated separately from the semantic factors known to affect attraction. What is interesting is that the semantic relatedness as a factor can be observed in our ‘priming contexts’ as well, which leads us to conclude that the notion of attraction error as we know it does not fit the data presented here. Namely, the semantics that leads the speaker to an error is often found outside the

⁶ This however does not mean semantic effects should not be promoted over other types of factors (cf. SLIOUSSAR–MALKO 2016: 4).

TS, which has been considered to be the domain of attraction in all the relevant studies. This leads us to conclude that agreement errors may not always be formulated as consequence of attraction and the influence of model sentence should be controlled for.

The discussion of the semantic effects on agreement errors is highly relevant to another important issue. Most agreement errors found in our data are those of number agreement. Wrong number agreement is consistent throughout, both on the auxiliaries and the participle verb. At the same time, as shown in Table 1, gender mistakes occur in 11 cases of full attraction (always in masculine gender) and only 1 case of ghost attraction (feminine gender). In other words, while number errors occur in 100% of erroneous sentences with relative clauses, gender errors occur 42.8% of the time. This is not surprising considering the semantic effects we observe, which are all related to the interpretation of number. Also, it is not obvious in any way how grammatical gender can be related to any specific semantics, when it comes to inanimate nouns. It gives us however an idea of how we might compare the animate and inanimate subjects and interveners/attractors in independent studies of agreement errors, and how we might redesign the production task in order to focus squarely on the choice of gender.

Finally, the rate of gender agreement errors compared to number agreement errors does not clearly follow given our conclusions regarding the role of linear closeness in gender agreement. That relevant clausal (hierarchical) domain must be observed with all types of agreement operations is well established, and if linear closeness is the factor that contributes to the variability of gender agreement in that domain, the question is why it does not occur as an error across domains more often, or at least as often as number agreement errors do.

5. CONCLUDING REMARKS. Our findings inform both the theoretical considerations regarding agreement and speech production error theories. We conclude that the theoretical implication mentioned above about gender attraction errors being co-related with the linear proximity of the attractor to the verb is not confirmed by the current data found with relative clauses in subject positions. At this point the linear closeness condition seems not relevant to errors in gender. The low rate of their occurrence should be addressed in future attraction error studies specifically targeting gender, controlling for the syntactic and lexical priming. The possible semantic effects should be hypothesized with respect to gender itself (e.g., animacy effect).

APPENDIX 1: THE LIST OF MODEL SENTENCES AND NP+RC SUBJECTS

		gender-number features	characters with spaces
1.	<i>Dvoboj je otkazan zbog nevremena.</i>	[m-sg]	32
	‘The duel was canceled because of the weather.’		
	Putovanje koje su osmislili vodiči		34
	‘The trip which the guides designed.’		
2.	<i>Zahtev je odobren na sastanku.</i>	[m-sg]	29
	‘The request was approved at the meeting.’		
	Napredovanje koje su podržali profesori		39
	‘The promotion that the professors supported’		
3.	<i>Neboder je izgrađen na keju.</i>	[m-sg]	28
	‘The skyscraper was built on the quay.’		
	Igralište koje su uredili umetnici		35
	‘The playground which was designed by artists’		
4.	<i>Sanduci su potonuli na dno.</i>	[m-pl]	28
	‘The chests sank to the bottom.’		
	Sidro koje su bacili mornari		28
	‘The anchor which the sailors threw’		
5.	<i>Balvani su bačeni na hrpu.</i>	[m-pl]	27
	‘The logs were thrown on a/the pile.’		
	Stablo koje su posekli ljudi		28
	‘The tree that the people cut’		
6.	<i>Dokumentarci su prikazani na televiziji.</i>	[m-pl]	41
	‘The documentaries were shown on TV’		
	OTVARANJE KOJE SU ORGANIZOVALI SLIKARI		38
	‘The opening that the painters organized’		
7.	<i>Reklama je puštena na radiju.</i>	[f-sg]	29
	‘A/The commercial was played on the radio.’		
	Pitanje koje su postavili slušaoci		35
	‘The question that was asked by the listeners’		
8.	<i>Zakletva je prekršena bez razloga.</i>	[f-sg]	34
	‘The oath was broken without any reason.’		
	Obećanje koje su dali doktori		29
	‘The promise which the doctors gave’		
9.	<i>Fabrika je propala zbog nemara.</i>	[f-sg]	31
	‘The factory was ruined because of negligence.’		
	TRŽIŠTE KOJE SU VODILI MENADŽERI		32
	‘The market which the managers ran’		

10.	Mreže su prebačene preko zida. 'The nets were thrown over/onto the wall.'	[f-pl]	31
	UŽE KOJE SU ISPLELI RIBARI		27
	'The rope which the fisherman wove'		
11.	Primedbe su odbačene na sudu. 'The objections were dismissed in the court.'	[f-pl]	30
	Glasanje koje su nadzirali posmatrači		37
	'The election which the monitors observed'		
12.	Grane su istrulile pod snegom. 'The branches rotted under the snow.'	[f-pl]	31
	Drvo koje su posadili gorani		28
	'The tree which the scouts planted'		
13.	Ogledalo je stavljeno u fioku. 'The mirror was put in a/the drawer.'	[n-sg]	30
	Pismo koje su poslali obožavaoci		32
	'The letter which the fans sent'		
14.	Unapređenje je prikazano na vestima. 'The promotion was shown on the news.'	[n-sg]	37
	Takmičenje koje su podržali sportisti		37
	'The championship which the sportsmen supported'		
15.	Kuvalo je pušteno u prodaju. 'The kettle was released for sale.'	[n-sg]	29
	TUTKALO KOJE SU ZATRAŽILI KUPCI		31
	'The glue which the customers demanded'		
16.	Sela su izbrisana s karte. 'The villages were wiped off the map.'	[n-pl]	27
	Polje koje su obradili seljaci		30
	'The field that the villagers/farmers cultivated'		
17.	Gradilišta su ograđena za tren. 'The building sites were enclosed in a second.'	[n-pl]	31
	Dvorište koje su počistili redari		33
	'The yard which the monitors cleaned'		
18.	Istraživanja su objavljena u časopisu. 'The research was published in the journal.'	[n-pl]	38
	Ispitivanje koje su sprovodili psiholozi		40
	'The research experiment/study which the psychologists conducted'		

APPENDIX 2: INSTANCES OF AGREEMENT ERRORS

		MS: Zahtev je odobren na sastanku. (Msg) TS: Napredovanje koje su podržali profesori	
(1)	Napredovanje koje su podržali profesori su ODRŽANI u na sastanku.		(NSFSB07)
	promotion _{.NSG} which aux supported professors _{.MPL} aux _{.PL} HELD _{.MPL} at meeting		
(2)	Napredovanje koje su podržali profesori su odobreni na sastanku.		(NSMSM06)
	promotion _{.NSG} which aux supported professors _{.MPL} aux _{.PL} approved _{.MPL} at meeting		
		MS: Dvoboj je otkazan zbog neveremena. (Msg) TS: Putovanje koje su osmislili vođiđi	
(3)	Putovanje koje su osmislili vođiđi su otkazani zbog nevremena.		(NSMAK30)
	trip _{.NSG} which aux designed guides _{.MPL} aux _{.PL} canceled _{.MPL} because-of weather		
		MS: Fabrika je propala zbog nemara. (Fsg) TS: Tržište koje su vodili menadžeri	
(4)	Tržište koje su vodili menadžeri ...su propali...zbog nemara...		(NSMDM01)
	market _{.NSG} which aux run managers _{.MPL} aux _{.PL} crashed _{.MPL} because-of negligence		
(5)	Tržište koje su vodili menadžeri su propali zbog nemara.		(NSFSR03)
	market _{.NSG} which aux run managers _{.MPL} aux _{.PL} crashed _{.MPL} because-of negligence		
		MS: Zakletva je prekršena bez razloga. (Fsg) TS: Obećanje koje su dali doktori	
(6)	Obećanje koje su dali doktori je prekršeno... su prekršena.		(NSMSS21)
	promise _{.NSG} which aux given doctors _{.MPL} aux _{.SG} broken _{.NSG} aux _{.PL} broken _{.NPL}		
(7)	Obećanje... je prekršeno; obećanjA su prekršena.		(NSMDM01)
	promise _{.NSG} aux _{.SG} broken _{.NSG} promises _{.NPL} aux _{.PL} broken _{.MPL}		
		MS: Reklama je puštena na radiju. (Fsg) TS: Pitanje koje su postavili slušaoci	
(8)	Pitanje koje su postavili slušaoci su pušteni na radiju.		(NSFNP13)
	question _{.NSG} which aux posed listeners _{.MPL} aux _{.PL} played _{.MPL} on radio		
(9)	Pitanje koje su postavili slušaoci su pušteni na radiju.		(NSMOV31)
	question _{.NSG} which aux posed listeners _{.MPL} aux _{.PL} played _{.MPL} on radio		
(10)	Pitanje koja su postavili slušaoci su puštena na radiju.		(NSMAK30)
	question _{.NSG} which aux posed listeners _{.MPL} aux _{.PL} played _{.NPL} on radio		
(11)	Pitanje koje su postavili slušaoci su puštena na radiju.		(NSMSG28)
	question _{.NSG} which aux posed listeners _{.MPL} aux _{.PL} played _{.NPL} on radio		
		MS: Primedbe su odbačene na sudu. (Fpl) TS: Glasanje koje su nadzirali posmatrađi	
(12)	Glasanje koje su nadzirali posmatrađi .. su ...odbađeni na sudu.		(NSMOV31)
	election _{.NSG} which observed monitors _{.MPL} aux _{.PL} rejected _{.MPL} in court		
		MS: Grane su istrulile pod snegom. (Fpl) TS: Drvo koje su posadili gorani	

(13)	Drvo koje su posadili gorani su istrulili pod snegom.	(NSMMB22)
	tree _{NSG} which aux planted scouts _{MPL} aux _{PL} rotted _{MPL} under snow	
(14)	Drvo koje su posadili gorani su... je istrunulo pod snegom.	(NSFND16)
	tree _{NSG} which aux planted scouts _{MPL} aux _{PL} aux _{SG} rotted _{NSG} under snow	
(15)	Drvo koje su posadili gorani su... je istrunilo pod snegom.	(NSFLC11)
	tree _{NSG} which aux planted scouts _{MPL} aux _{PL} aux _{SG} rotted _{NSG} under snow	
	MS: Ogledalo je stavljeno u fioku. (Nsg) TS: Pismo koje su poslali obožavaoci	
(16)	Pismo koje su poslali obožavaoci su stavljeno... stavljena... u fioku..hm.	(NSMSG28)
	letter _{NSG} which aux sent fans _{MPL} aux _{PL} put _{NSG} put _{NPL} in drawer hmm	
(17)	Pismo koje su poslali obožavaoci su stavljeni u fioku.	(NSMOV31)
	letter _{NSG} which aux sent fans _{MPL} aux _{PL} put _{MPL} in drawer	
	MS: Istraživanja su objavljena u časopisu. (Npl) TS: Ispitivanje koje su sprovodili psiholozi	
(18)	Ispitivanje koje su sprovodili psiholozi su objavljena.	(NSMSS21)
	experiment _{NSG} which conducted psychologists _{MPL} aux _{PL} published _{NPL}	
(19)	Ispitivanje koje su sprovodili psiholozi...su...obavljena NA ČASU.	(NSMMK25)
	experiment _{NSG} which conducted psychologists _{MPL} aux _{PL} published _{NPL} IN CLASS	
(20)	Ispitivanje koje su sprovodili psiholozi su... je objavljeno u časopisu.	(NSMPK24)
	experiment _{NSG} which conducted psychologists _{MPL} aux _{SG} aux _{PL} published _{FPL} in journal	
(21)	Ispitivanje koje su sprovodili psiholozi su...je objavljeno u časopisu.	(NSMMB27)
	experiment _{NSG} which conducted psychologists _{MPL} aux _{SG} aux _{PL} published _{FPL} in journal	
(22)	Ispitivanje koje su sprovodili psiholozi su... je objavljeno u časopisu.	(NSMSG28)
	experiment _{NSG} which conducted psychologists _{MPL} aux _{SG} aux _{PL} published _{FPL} in journal	
(23)	Ispitivanje koje su sprovodili psiholozi su je Ispitivanje koje su sprovodili psiholozi su ... je objavljeno u časopisu.	(NSMAK30)
	experiment _{NSG} which conducted psychologists _{MPL} aux _{PL} aux _{SG} experiment _{NSG} which conducted psychologists _{MPL} aux _{PL} aux _{SG} published _{NSG} in journal	
(24)	Ispitivanje koje su sprovodili psiholozi su objavljene u časopisu.	(NSMOV31)
	experiment _{NSG} which conducted psychologists _{MPL} aux _{PL} published _{FPL} in journal	
	MS: Sela su izbrisana s karte. (Npl) TS: Polje koje su obradili seljaci s...je izbrisano s karte	
(25)	Polje koje su obradili seljaci s...je izbrisano s karte.	(NSMMK25)
	field _{NSG} which aux cultivated villagers _{MPL} aux _{PL} aux _{SG} erased _{NSG} from map	
(26)	Polje koje su obradili seljaci su ... je izbrisano s karte.	(NSMSG28)
	field _{NSG} which aux cultivated villagers _{MPL} aux _{PL} aux _{SG} erased _{NSG} from map	
(27)	Polje koje su obradili seljaci su ... je izbrisano s karte.	(NSMAK30)
	field _{NSG} which aux cultivated villagers _{MPL} aux _{PL} aux _{SG} erased _{NSG} from map	
	MS: Gradilišta su ograđena za tren. (Npl) TS: Dvorište koje su počistili redari	
(28)	Dvorište koje su počistili redari su ograđeni za tren.	(NSMOV31)
	yard _{NSG} which aux cleaned monitors _{MPL} aux _{PL} in second	

REFERENCES

- BADECKER, William, Frantisek KUMINIAK. Morphology, Agreement and Working Memory Retrieval in Sentence Production: Evidence from Gender and Case in Slovak. *Journal of Memory and Language* 56 (2007): 65–85.
- BOCK, J. Kathryn. Syntactic Persistence in Language Production. *Cognitive Psychology* 18 (1986): 355–387.
- BOCK, Kathryn, Carol A. MILLER. Broken Agreement. *Cognitive Psychology* 23 (1991): 45–93.
- BOCK, Kathryn, J. Cooper CUTTING. Regulating Mental Energy: Performance Units in Language Production. *Journal of Memory and Language* 31(1992): 99–127.
- BOŠKOVIĆ, Željko. Unifying First and Last Conjunct Agreement. *Natural Language & Linguistic Theory* 27 (2009): 455–496.
- CHOMSKY, Noam. Minimalist Inquiries: The Framework. Roger Martin, David Michaels, Juan Uriagereka, Samuel Jay Keyeser (eds.). *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*. Cambridge: MIT Press, 2000, 89–155.
- CORBETT, Greville G. Resolution Rules: Agreement in Person, Number and Gender. Gerald Gazdar, Ewan Klein and Geoffrey Pullum (eds.). *Order, concord and constituency (Linguistic Models, 4)*. Dordrecht: Foris, 1983, 175–206.
- CORBETT, Greville G. *Gender*. Cambridge: Cambridge University Press, 1991.
- EBERHARD, Kathleen M., J. Cooper CUTTING, Kathryn BOCK. Making Syntax of Sense: Number Agreement in Sentence Production. *Psychological Review* 112 (2005): 531–559.
- FRANCK, Julie, Gabriella VIGLIOCCO, Janet NICOL. Subject-Verb Agreement Errors in French and English: The Role of Syntactic Hierarchy. *Language and Cognitive Processes* 17/4 (2002): 371–404.
- FUCHS, Zuzanna, Maria POLINSKY, Gregory SCOTRAS. The Differential Representation of Number and Gender in Spanish. *The Linguistic Review* (2015): 1–36.
- HASKELL, Todd, Robert THORNTON, Maryellen MACDONALD. Experience and Grammatical Agreement: Statistical Learning Shapes Number Agreement Production. *Cognition* 114 (2010): 151–164.
- MALKO Anton, Natalia SLIOUSSAR. Attraction Errors in Gender Agreement: Evidence from Russian. *Proceedings of FASL 21*. Michigan Slavic Publications, 2013, 162–175.
- MARUŠIČ, Franc, Andrew NEVINS, Amanda Saksida. Last Conjunct Agreement in Slovenian. Richard Compton, Magdalena Golezdzinowska, Ulyana Savchenko (eds). *Proceedings of Formal Approaches to Slavic linguistics 2006*, Ann Arbor: Michigan Slavic Publications, 2007, 210–227.
- MARUŠIČ, Franc, Andrew NEVINS, William BADECKER. The Grammars of Conjunction Agreement in Slovenian. *Syntax* 18/1 (2015): 39–77.
- MITIĆ, Ivana, Boban ARSENJEVIĆ. Plural Conjuncts and Syncretism Facilitate Gender Agreement in Serbo-Croatian: Experimental Evidence. *Frontiers in Psychology* 10 (2019): 942.
- PICKERING, J. Martin, Holly P. BRANIGAN. Syntactic Priming in Language Production. *Trends in Cognitive Sciences* 3(1999): 136–141.
- RISTIĆ, Bojana, Nicola MOLINARO, Simona MANCINI. Agreement Attraction in Serbian. Decomposing Markedness *The Mental Lexicon* 11/2 (2016): 242–276.
- SILOUSSAR, Natalia, Anton MALKO. Gender Agreement Attraction in Russian: Production and Comprehension Evidence. *Frontiers in Psychology* 7 (2016): 1651.
- SLIOUSSAR, Natalia. Forms and Features: The Role of Syncretism in Number Agreement Attraction. *Journal of Memory and Language* 101 (2018): 51–63.
- VIGLIOCCO, Gabriella, Janet NICOL. Separating Hierarchical Relations and Word Order in Language Production. Is Proximity Concord Syntactic or Linear? *Cognition* 68 (1998): 3–29.
- WAGERS, Matthew. *The Structure of Memory Meets Memory for Structure in Linguistic Cognition*. Doctoral dissertation. University of Maryland, 2008.
- WILLER GOLD, Jana, Boban ARSENJEVIĆ, Mia BATINIĆ, Michael BECKER, Nermina ČORDALIJA, Marijana KRESIĆ, Nedžad LEKO, Franc Lanko MARUŠIČ, Tanja MILIČEV, Nataša MILIČEVIĆ, Ivana MITIĆ, Anita PETI-STANTIĆ, Branimir STANKOVIĆ, Tina ŠULIGOJ, Jelena TUŠEK, Andrew NEVINS. When Linearity Prevails over Hierarchy in Syntax. *PNAS (Proceedings of the National Academy of Sciences of the United States of America)* 115 (3) (2018): 495–500.
- WILLER-GOLD, Jana, Boban ARSENJEVIĆ, Mia BATINIĆ, Nermina ČORDALIJA, Marijana KRESIĆ, Nedžad LEKO, Franc MARUŠIČ, Tanja MILIČEV, Nataša MILIČEVIĆ, Ivana MITIĆ, Andrew NEVINS, Anita

РЕТИ-СТАНИЋ, Branimir STANKOVIĆ, Tina ŠULIGOJ, Jelena TUŠEK. Conjoint Agreement and Gender in South Slavic: From Theory to Experiments to Theory. *Journal of Slavic Linguistics* 24/1(2016): 187–224.

*

Митић, Ивана. *Ефекат ѓрамајичких и синѓаксичких каракѓерисѓика координираних субјекта на слањање глаола у роду у срѓском језику*. Докторска дисертација, Универзитет у Нишу, 2019.

Наташа Милићевић
Тања Милићев

КОНГРУЕНЦИЈА И ГРЕШКЕ УСЛЕД ПРИВЛАЧЕЊА У РЕЛАТИВНИМ КЛАУЗАМА У СРПСКОМ

Резиме

Овај рад представља анализу грешака у конгруенцији предиката са субјектом са релативном субординираном клаузом. Анализирани подаци су добијени у продукцијском експерименту чији су учесници говорници српског језика са територије Војводине. Циљ ове студије је био да се утврди да ли се и у којој мери овакве грешке у слањању јављају у српском језику. Она доноси и новину у експерименталном дизајну, будићи да анализирамо могућност јављања грешака привлачења под додатним утицајем претходног контекста.

Наша прелиминарна анализа сумира потенцијалне семантичке факторе који доприносе овом феномену. Подаци из српског језика указују на то да је дистрибутивност један од важнијих фактора, али и семантичка блискост која у нашим подацима постоји између реченице модела и циљне реченице. Овај рад доноси нове опсервације приликом тумачења, јер указује на улогу синтаксичког и лексичког прајминга. Наш закључак је да овакав утицај, нетипичан за грешке услед привлачења указује на могућност да се не ради искључиво, а можда ни доминантно о грешкама привлачења.

Однос грешака у конгруенцији у броју и роду је очекиван с обзиром на тип идентификованих семантичких утицаја, али не и с обзиром на наша сазнања о природи слањања у роду. Другим речима, претпоставка да линеарна близина између именице на позицији субјекта и глагола игра улогу у избору конгруенције у роду не имплицира уочену разлику у проценту грешака које се јављају у ове две категорије слањања. С обзиром на то даје хијерархијски детерминисан домен (домен клаузе) основна претпоставка свих типова конгруенције подједнако, као и да је линеарност додатно посебно релевантна за слањање у роду, потребно је одговорити на питањезашто се грешке у овој врсти слањања, тј. случајеви напуштања овог домена, не јављају барем у истој мери као и грешке у слањању у броју. У том смислу овај рад је информативан и за будућа теоријска разматрања конгруенције и за теорију језичке продукције.

University of Novi Sad
Faculty of Philosophy
Department of English
Dr Zorana Đindića 2, 21000 Novi Sad, Serbia
natasa.milicevic@ff.uns.ac.rs
tanja.milicev@ff.uns.ac.rs

(Примљено: 15. септембра 2022;
прихваћено: 10. новембра 2022)