

An experimental approach to case marking in Romanian elliptical comparatives

Gabriela Bilbiie¹

Abstract: The main goal of this paper is to experimentally assess the case marking alternation on the subject remnant in Romanian gapped comparatives, in order to illustrate the limits of introspective informal judgments as the sole source of data and to show the importance of more formal methods, which provide more reliable and richer data. In particular, this study aims to show the role of the second remnant (i.e., the direct object) with respect to the case marking options on the first (pronominal subject) remnant. Crucially, our experimental approach allows us to observe the interaction between the semantic factor of animacy and case marking in Romanian gapped comparatives. In order to account for the gradience observed in our experimental data, we propose an approach based on acceptability rather than grammaticality. From a theoretical perspective, the case alternation on the subject remnant challenges the deletion-based syntactic analysis and argues for a constructionist approach in terms of fragments.

Key words: gapping, comparatives, case marking, animacy, acceptability judgments.

1. Introduction

Ellipsis has been most studied in relation to coordination, as coordination has been assumed to be the privileged syntactic context (or even the only possible one) for elliptical constructions. A typical example is the gapping construction (i.e., two remnants lacking the main verb, cf. Ross 1967, 1970, Sag 1976, Neijt 1979, Hartmann 2000, Repp 2009, a.o.), which is traditionally analyzed as restricted to coordination, as illustrated in (1). Therefore, the elliptical sequence containing the remnants *John* and *violin* is coordinated with the source (full) clause containing the correlates *Robert* and *piano*, as well as the antecedent *played* necessary for the interpretation of the elliptical sequence. This elliptical construction is assumed to be excluded in

¹ University of Bucharest & Laboratoire de Linguistique Formelle (CNRS, Paris); gabriela.bilbiie@lls.unibuc.ro.

subordination constructions (cf. Jackendoff 1971, Koutsoudas 1971, Hankamer 1979, a.o.), as shown by the contrast (1a)-(1b). However, gapping may occur in comparatives (1c).

- (1) a. Robert played piano **and** John violin.
 b. *Robert played piano {**whenever/because**} John violin.
 c. Robert played piano better **than** John violin.

More generally, comparatives constitute a particular syntactic context favouring ellipsis (Lechner 2004). Comparative structures can significantly improve the acceptability of certain types of ellipsis. For example, pseudogapping (Levin 1986), which involves two remnants flanking an auxiliary in the elliptical clause (2a), is considered quite marginal with coordination (Lasnik 1999, Hoeksema 2006), but quite natural in comparative structures (Miller 2014), cf. (2b-c). Moreover, comparative structures even seem to allow many more types of ellipsis than coordinated structures, as observed by Jackendoff (1971) based on the contrast (3a)-(3b). The coordination in (3b) only allows the gapping construction *Harry the grapes*, whereas the comparative structure in (3a) allows a variety of elliptical constructions (a single remnant *Harry*, verb phrase ellipsis *Harry did*, gapping *Harry grapes*, pseudogapping *Harry will grapes*).

- (2) a. Robert played piano **and** John did violin.
 b. It hurt me, as much **as** it did her. (COCA², see Miller 2014)
 c. You must treat him **as** you would me. (COCA, see Miller 2014)
- (3) a. Bill ate more peaches **than** {Harry / Harry did / Harry did grapes / Harry grapes / Harry will grapes}.
 b. Bill ate the peaches **and** {*Harry / *Harry did / *Harry did the grapes / Harry the grapes / *Harry will the grapes}. (Jackendoff 1971: 22)

Given the versatile behaviour of ellipsis in comparatives, it would be not surprising that Romanian gapping could be less restricted in this kind of contexts than with coordination. The phenomenon which we want to investigate in detail in this paper is the (nominative/accusative) case alternation of the pronominal subject remnant in comparatives (4a), which for some scholars (Zafiu 2013) seems to be possible in comparatives, but not in gapped coordinations, where only the nominative case is allowed on the subject remnant (4b). Whereas the case assignment on the subject remnant in gapped coordinations (4b) is unquestionable, the case alternation on the subject remnant in gapped comparatives (4a) is controversial in the literature.

² *Corpus of Contemporary American English*.

- (4) a. Ana iubește geografia mai mult **decât** {eu/mine} istoria.
 Ana likes geography.DEF more much than 1SG.NOM/1SG.ACC
 history.DEF
 'Ana likes geography more than I history.'
- b. Ana iubește geografia, iar {eu/*mine} istoria.
 Ana likes geography.DEF and 1SG.NOM/1SG.ACC history.DEF
 'Ana likes geography and I history.'

Therefore, the data such as (4a) are far from clear with respect to the case marking options in Romanian gapped comparatives. Whereas in comparatives reduced to a single remnant, the pronominal subject always bears the accusative marking (5) despite the fact that it is interpreted as the subject of the comparative sequence³, in comparatives containing more than one remnant, the case marking of the pronominal subject is subject to debate. In the literature, we find some contradictory data obtained from informal introspective judgments. On the one hand, Van Peteghem (2009) considers that, in gapped *decât*-comparatives, if the first remnant is a subject, it always bears the nominative case (6a), as is the case in gapped coordinations. On the other hand, Zafiu (2013) notes that the subject remnant in *decât*-comparatives always allows a case alternation (6b): it may bear not only nominative (cf. *derived-case comparatives*), but also accusative case (cf. *fixed-case comparatives*), the latter case being the result of a grammaticalization process. Each of these two kinds of data can be taken as evidence in favour of one or the other of two competing accounts, namely structural vs. non-structural analysis (for more details, see the introduction of Section 3).

- (5) a. Ana iubește geografia mai mult **decât** {*eu/mine}.
 Ana likes geography.DEF more much than 1SG.NOM/1SG.ACC
 'Ana likes geography more than me.'
- b. Paul este mai mare **decât** {*tu/tine}.
 Paul is more old than 2SG.NOM/2SG.ACC
 'Paul is older than you.'
- (6) a. Ea lucrează mai mult acasă **decât** {tu/*tine} la serviciu.
 She works more much at-home than 2SG.NOM/2SG.ACC at office
 'She works more at home than you at the office.' (Van Peteghem 2009: 104)
- b. Eu sunt mai bucuros azi **decât** {tu/tine} ieri.
 I am more happy today than 2SG.NOM/2SG.ACC yesterday
 'I am happier today than you yesterday.' (Zafiu 2013: 505)

The main goal of this paper is to experimentally assess the case marking alternation in Romanian gapped comparatives (i.e., with two

³ It is assumed that the accusative case is assigned by the comparative marker, which behaves as a preposition (Van Peteghem 2009, Zafiu 2013, etc.).

remnants, the first being a pronominal subject) in order to illustrate the limits of introspective informal judgments as the sole source of data and to show the importance of more formal methods, which provide more reliable and richer data. This study aims to show the role of the second remnant with respect to case marking options on the first (subject) remnant. Crucially, our experimental approach allows us to observe the interaction between other linguistic factors, such as the semantic factor of animacy, and case marking in Romanian gapped comparatives.

The paper is structured as follows: In Section 2, we briefly present the main aspects of gapping in Romanian comparatives. In Section 3, we present our experimental study on case marking in Romanian gapped comparatives. Section 4 provides a general discussion of our experimental results by offering a possible explanation for the effects observed in the experiment.

2. Gapping in comparatives

Romanian comparatives⁴ display two prototypical patterns, both allowing elliptical sequences of two remnants (i.e., gapping). The first pattern, which we call **scalar *decât*-comparative** (or degree/quantity comparative), involves an order relation and is licensed by a gradable category (i.e., an adjective or an adverb) in the main clause, as in (7a). The second pattern, which we dub **non-scalar *ca*-comparative** (or quality comparative), gives rise to an analogy relation, as in (7b). As the label shows, scalar *decât*-comparatives are prototypically introduced by the comparative marker *decât* ‘than’, which is sometimes replaced (in particular in the spoken language) by its non-scalar counterpart *ca* ‘as / like’. On the other hand, non-scalar *ca*-comparatives are prototypically introduced by the equative marker *ca* ‘as / like’.

- (7) a. Ana a luat la geografie mai mult {**decât/ca**} Maria la istorie.
 Ana has taken at geography more much than/than Maria at history
 ‘Ana did better in geography than Maria in history.’
- b. Ana se comportă cu taică-su (la fel) **ca** Ion cu maică-sa.
 Ana REFL behaves with father-REFL atsame as Ion with mother-REFL
 ‘Ana behaves towards her father like Ion towards his mother.’

Lechner’s (2004, 2018) hypothesis for comparatives in general is that elliptical processes targeting comparatives obey the same conditions as elliptical processes involved in coordination. We therefore expect gapping to behave the same in both syntactic

⁴ For more details about comparatives in Romanian from a Romance perspective, see Van Peteghem (2021).

contexts. However, as mentioned in the introduction, comparatives allow more flexibility than coordinations. Consequently, we expect that constraints on gapping in comparatives are less strict than what is generally observed with gapping in coordination. Bilbîie (2021) gives several pieces of evidence that show softened constraints of gapping in Romanian comparatives, compared to gapping in coordination⁵. We briefly mention here some arguments showing a more flexible behaviour of gapping in comparatives, in particular scalar *decât*-comparatives. First, unlike gapped coordinations, gapped comparatives do not have to share the same tense, mood, or aspect (TAM) with their source, cf. (8); comparatives easily give rise to a generic present tense interpretation (8b). Besides TAM mismatches, gapped comparatives seem to allow case marking mismatch: the pronominal subject in the gapped comparative can bear either nominative or accusative case in some cases, as illustrated above in (4a) and (6b).

- (8) a. Mama se comportă acum cu mine mai frumos **decât** tata ieri.
 Mum REFL behaves now with me more pleasantly than Dad yesterday
 ‘My mom is behaving now towards me better than my dad yesterday.’
- b. Lenuța ținea la Cristi mai ceva **decât** o mamă la fiul ei.
 Lenuța care.PST.IPFV for Cristi more something than a mother for son.
 DEF her
 ‘Lenuța was fond of Cristi more than a mother to her son.’

Moreover, unlike gapped coordinations that always obey the Coordinate Structure Constraint (namely, only across-the-board extraction is allowed, cf. Ross 1967), gapped comparatives allow asymmetric extraction; for example, in (9) we can extract a constituent out of the main clause without extracting its correspondent out of the gapped comparative.

- (9) Asta e genul de muncă de care Ion fuge _ mai rău **decât** dracu’
 de tămâie.
 This is kind.DEF of work from which Ion runs _ more badly than devil.DEF
 from incense
 ‘That’s the kind of work that Ion runs away from more than a pest house.’

While in gapped coordinations remnants typically have explicit correlates, gapped comparatives can naturally have remnants whose correlates are implicit (i.e., they are not lexically realized, e.g., prodrop) or weak elements (e.g., pronominal clitics). For example, in (10), the subject remnant *ea* ‘she’ has an implicit

⁵ For the lack of space, we will not go through the details here. For an exhaustive analysis of the behaviour of gapping in coordination contexts, see Bilbîie (2017).

correlate, a prodrop subject, whereas the object remnant *pe mine* ‘me’ (with differential object marking *pe*) has as correlate the weak pronominal clitic *o* ‘her’.

- (10) O iubesc mai mult **decât** ea pe mine.
 CL.ACC.F.3SG love.1SG more much than she DOM 1SG.ACC
 ‘I love her more than she (loves) me.’

At the semantic level, if gapped coordinations generally involve a strong semantic parallelism, in gapped comparatives semantic contrast is rather a softened constraint. Therefore, whereas in gapped coordinations each remnant must stand in semantic contrast with respect to a correlate in the source, belonging to a well-defined alternative set, so that we can have at least two contrastive pairs (cf. Sag 1976), in gapped comparatives we can contrast elements from rather different sets, as it is best observed with comparatives displaying fixed expressions and idioms (11).

- (11) a. Majoritatea bărbaților fug de spălatul vaselor mai rău **decât** dracu’
 de tămâie.
 ‘Most men run away from washing dishes worse than the devil
 from incense.’
 b. Fata asta se agăța de mine mai ceva **decât** scaiul de om.
 ‘This girl was clinging to me more than the thistle to men.’

Based on this evidence, we can conclude that, in Romanian, gapping in comparatives is much less constrained than with coordination⁶. Consequently, Lechner’s (2004) hypothesis that gapping should have exactly the same behaviour in comparatives and coordination cannot be adopted for Romanian.

We should now explain why gapping is restricted to coordination and comparatives, being excluded in regular subordination contexts. The crucial property shared by these two constructions is parallelism (Carlson 2001, Amsili & Desmets 2008, Mouret & Desmets 2008). Though this parallelism is stronger in coordination than in comparatives, we can easily observe that: (i) at the syntactic level, both constructions usually involve a structural parallelism between the remnants and their correlates (case or preposition marking, syntactic function, etc.); (ii) at the semantic level, both constructions involve a contrast relation between a remnant and a correlate (be it an implicit one), giving rise to two contrastive pairs; and crucially, (iii) at the discourse level, both constructions involve a symmetric discourse relation (namely, events are independent from each other),

⁶ See Desmets (2008) for a similar conclusion on French *comme*-comparatives.

whereas in regular subordinate structures, events are typically in a hierarchical relation (e.g. cause-effect, concession, condition). So, unlike comparatives, the other types of subordinate structures are not characterized as parallel structures, which explains their incompatibility with gapping.

3. The experimental study

In the previous sections, we noted that scalar *decât*-comparatives seem to allow case alternation (nominative vs. accusative) of the subject remnant, when the comparative sequence contains more than one remnant (compare (4a) and (5a) repeated below in (12)). However, as mentioned in the introduction, the judgments on the comparatives with two remnants are not so clear, as shown by the contradictory data in (6) above: for some scholars (Van Peteghem 2009), only the nominative is allowed (12b); for others (Zafiu 2013), both the nominative and accusative are available (12a).

- (12) a. Ana iubește geografia mai mult **decât** {eu/mine} istoria.
 Ana likes geography.DEF more much than 1SG.NOM/1SG.ACC history.DEF
 ‘Ana likes geography more than I history.’
- b. Ana iubește geografia mai mult **decât** {*eu/mine}.
 Ana likes geography.DEF more much than 1SG.NOM/1SG.ACC
 ‘Ana likes geography more than me.’

From a theoretical perspective, the differences in judgments are crucial for the linguistic analysis of gapped comparatives. If only the nominative is allowed, this is expected under a clause deletion analysis (Lechner 2004, 2018), involving a reduction operation (called ‘Comparative Ellipsis’, cf. Bresnan 1975), similar to Conjunction Reduction operation in coordination. In this structural approach, one assumes unpronounced syntactic structure at the ellipsis site as the result of some operation of deletion: therefore, the reduced comparative clause behaves as a full clause. Moreover, such a structural approach is based on ‘connectivity effects’ (Merchant 2018), such as case matching effects (see also Ross 1969). As the subject of a full clause generally bears the nominative case in Romanian, this should also apply in reduced comparatives, if the relevant case assigners are syntactically present. Therefore, the fact that the case of the remnant must match that of the correlate (12a) is fully expected under the mainstream ellipsis analysis. On the other hand, the possibility of case alternation, and, in particular, the case mismatch that one could have between a subject remnant bearing the accusative case and its correlate obligatorily bearing the

nominative case (12b) is problematic for a structural approach⁷ and argues rather in favour of a non-structural approach, which does not involve a syntactic reconstruction mechanism or unpronounced syntactic structure at the ellipsis site. Under this constructionist account, gapped comparatives constitute a specific class of fragments, with no verbal head, but a propositional content (cf. Ginzburg & Sag 2000). Such a fragment-based analysis has been proposed for reduced comparatives in French (Amsili & Desmets 2008, Desmets 2008, Amsili *et al.* 2021). Unlike the structural approach, this fragment-based analysis of gapped comparatives does not expect connectivity effects; moreover, the gapped comparative does not necessarily share the same properties of its full counterpart. Therefore, under such an account, it is not surprising if the gapped comparative may exhibit a case alternation on the subject remnant, whereas its full counterpart only allows nominative case on its subject.

In order to tease apart the previous conflicting judgments that come from introspection on constructed examples, we ran an experimental study on the alternation between nominative and accusative case for the subject remnants in Romanian gapped comparatives. The present study was guided by the following research questions: (i) Is there a free alternation between the nominative and accusative, as postulated by Zafiu (2013)? (ii) If not, which factor could explain the preferences for one case or the other? In accordance with the constructionist approach, we expect a case alternation (*pace* Van Peteghem 2009), which is not free (*pace* Zafiu 2013), but rather conditioned by non-syntactic factors, such as the semantic category of animacy of the second remnant. The contrast in (13), based on introspective intuitions, shows indeed an animacy effect: there seems to be a preference for accusative marking of the subject remnant, when it is not followed by an animate remnant (13a), whereas the nominative seems to be the only strategy which is available when both remnants are animate (13b).

- (13) a. Ana iubește geografia mai mult **decât** {tine/tu} istoria.
 Ana likes geography.DEF more much than 2SG.ACC/2SG.NOM history.DEF
 ‘Ana likes geography more than you history.’
- b. Ana îl iubește pe Ion mai mult **decât** {tu/??tine} pe Dan.
 Ana CL.ACC.M.3SG love.3SG DOM Ion more much than 2SG.NOM/2SG.ACC
 DOM Dan
 ‘Ana loves Ion more than you Dan.’

⁷ A structural approach has to appeal to some additional stipulations in order to deal with this case alternation, and in particular with case mismatch effects (e.g., see the small clause analysis advocated by Lechner 2018 to explain why the subject remnant may surface with accusative case).

As controlled collected judgments are more reliable than speakers' intuitions (Wasow & Arnold 2005, Gibson & Fedorenko 2013, Sprouse *et al.* 2013), we employed an Acceptability Judgment Task (AJT) in order to assess these primary intuitions.

3.1. Materials

We created 20 experimental items following a 2x2 factorial design with CASE (+*accusative*, -*accusative*) and ELLIPSIS (+*verb*, -*verb*) as independent variables. This manipulation yielded the 4 experimental conditions illustrated in (14) and (15).

- (14) *Crezi că-i place Anei vreo materie în mod deosebit?*
 'Do you think that Ana particularly likes a specific subject area?'
- a. [+accusative, -verb]
 Ana iubește geografia mai mult **decât** tine istoria.
 Ana likes geography.DEF more much than 2SG.ACC history.DEF
 'Ana loves geography more than you history.'
- b. [-accusative, -verb]
 Ana iubește geografia mai mult **decât** tu istoria.
 Ana likes geography.DEF more much than 2SG.NOM history.DEF
 'Ana loves geography more than you history.'
- c. [+accusative, +verb]
 Ana iubește geografia mai mult **decât** iubești tine istoria.
 Ana likes geography.DEF more much than love.2SG 2SG.ACC history.DEF
 'Ana loves geography more than you love history.'
- d. [-accusative, +verb]
 Ana iubește geografia mai mult **decât** iubești tu istoria.
 Ana likes geography.DEF more much than love.2SG 2SG.NOM history.DEF
 'Ana loves geography more than you love history.'
- (15) *Crezi că Ana îl iubește cu adevărat pe Ion?*
 'Do you think that Ana really loves Ion?'
- a. [+accusative, -verb]
 Ana îl iubește pe Ion mai mult **decât** tinepe Dan.
 Ana CL.ACC.M.3SG loves DOM Ion moremuch than 2SG.ACC DOM Dan
 'Ana loves Ion more than you Dan.'
- b. [-accusative, -verb]
 Ana îl iubește pe Ion mai mult **decât** tu pe Dan.
 Ana CL.ACC.M.3SG loves DOM Ion more much than 2SG.NOM DOM Dan
 'Ana loves Ion more than you Dan.'
- c. [+accusative, +verb]
 Ana îl iubește pe Ion mai mult **decât** îl iubești
 tine pe Dan.
 Ana CL.ACC.M.3SG loves DOM Ion more much than CL.ACC.M.3SG love.2SG
 2SG.ACC DOM Dan
 'Ana loves Ion more than you love Dan.'
- d. [-accusative, +verb]
 Ana îl iubește pe Ion mai mult **decât** îl iubești

Ana CL.ACC.M.3SG loves DOM Ion more much than CL.ACC.M.3SG love.2SG
 tu pe Dan.
 2SG.NOM DOM Dan
 ‘Ana loves Ion more than you love Dan.’

As the examples above show, the experimental items were all complex sentences consisting of a full clause and a comparative sequence introduced by the marker *decât* ‘than’ and reduced to two remnants (the first one being interpreted as the subject of the sequence). We compared elliptical comparatives (conditions a-b) with non-elliptical ones (conditions c-d) to better control our two factors. In order to facilitate the acceptability of such complex sentences, we paid attention to the context. Therefore, the experimental items were not presented out of the blue, but rather as possible answers to a context question, which set the background in the discourse.

Both the main clause and the comparative sequence introduced a human character in the subject position, by means of a proper name in the main clause and a strong pronoun in the comparative; in the latter case, the pronoun was always 1st or 2nd person singular (half of the items with the 1st person, and the other half with the 2nd person), as the nominative/accusative cases are most clearly marked for the 1st and 2nd person singular (NOM. *eu* ‘I’ vs. ACC. *mine* ‘me’; NOM. *tu* ‘you’ vs. ACC. *tine* ‘you’), while the other forms display a nominative-accusative syncretism (Vasilescu 2013). The main verb was always a transitive verb in the present indicative (*admira* ‘admire’, *adora* ‘adore’, *apăra* ‘protect’, *aprecia* ‘appreciate’, *aștepta* ‘wait’, *cunoaște* ‘know’, *iubi* ‘love’, *înțelege* ‘understand’, *lăuda* ‘praise’, *vedea* ‘see’, each repeated twice). Both the main clause and the comparative sequence have a direct object. Crucially, half of the items displayed inanimate direct objects (as illustrated in (14)), while the other half included animate direct objects (as shown in (15)). As Romanian has differential object marking (DOM with *pe*) and clitic doubling (Hill & Mardale 2017) with animate specific direct objects (as in (15)), we paid attention to the interpretation and form of our animate objects: we have both specific (16b) and non-specific (16a) direct objects, with and without DOM, in order to control for possible confounds and to rule out other explanations for the effects that we might observe. Finally, the main clause always contains a comparative governor, i.e., a degree element that licenses the *decât*-expression (e.g. *mai mult* ‘more’, *mai bine* ‘better’).

- (16) a. Ion adoră fetele mai mult **decât** {eu/mine} băieții.
 Ion adores girls.DEF more much than 1SG.NOM/1SG.ACC boys.DEF
 ‘Ion adores the girls more than I the boys.’
 b. Robert o admiră pe asistentă mai mult **decât** {eu/mine}
 Robert CL.ACC.F.3SG admires DOM nurse.F more much than 1SG.NOM/1SG.ACC

pe anesteziștă.
 DOM anaesthetist.F
 'Robert admires the nurse more than I the anaesthetist.'

It is important to note that the conditions (c) and (d) in our experimental items, with verb repetition (i.e., no ellipsis), served us as control items: in all (c) conditions, with verb reconstruction and an accusative subject, we have ungrammatical controls (since an accusative strong pronoun cannot be the subject of an overt verb), whereas in all (d) conditions, with verb reconstruction and a nominative subject, we are supposed to have grammatical controls. In both conditions, the subjects of the comparative are postverbal, in order to fulfil the word order constraint imposed by the comparative marker *decât* 'than', which requires the subject to be placed postverbally (as is the case with other subordinates, e.g., relatives; see Zafiu 2013).

Beside the 20 experimental items, we used 20 filler (grammatical) items from an unrelated experiment (testing the interaction between gender and the realization of the subject: pro-drop vs. overt subject in Romanian, as in (17)), in order to drive the participants' attention away from the phenomenon we investigated. As an additional control measure, half of the filler items were followed by a yes/no comprehension question.

- (17) *Ce părere are {Paul/Maria} despre acest restaurant?*
 'What does {Paul/Maria} think about this restaurant?'
- a. [masculine, null subject]
 Este extrem de mulțumit.
 Is extremely of satisfied.M.SG
 'He is very happy.'
 - b. [feminine, null subject]
 Este extrem de mulțumită.
 Is extremely of satisfied.F.SG
 'She is very happy.'
 - c. [masculine, overt subject]
El este extrem de mulțumit.
 He is extremely of satisfied.M.SG
 'He is very happy.'
 - d. [feminine, overt subject]
Ea este extrem de mulțumită.
 She is extremely of satisfied.F.SG
 'She is very happy.'

3.2. Procedure

Our acceptability judgment task was administered on IbeXFarm (Drummond 2013). Sentences were presented in a Latin Square within-subjects design, so that each participant saw each item in one

of its four conditions, in a random order, but never the same item in more than one condition. In addition, participants do not have the possibility of going back to change their judgments. Before starting the experiment, they had to read the instructions (which explained to them how to use the rating 7-point scale), and answer some background questions (e.g., age, gender, field of study, native language, etc.), and go through a short training session (to become familiar with the format of the experiment). The rating Likert scale was 1-7, where 1 means completely unacceptable and 7 means completely acceptable.

3.3. Participants

A total of 59 Romanian native speakers, recruited from the University of Bucharest, volunteered to complete the questionnaire online. Only Romanian monolingual speakers who answered correctly at least 75% of the comprehension questions were further considered for the statistical analysis. Consequently, we had 56 participants (mean age: 22.5, mode: 20, range: 18-36) who performed the task properly on the IbexFarm platform.

3.4. Results

Acceptability judgments (1-7) were entered into mixed-effect linear regression analyses, using the *lme4* package (Bates *et al.* 2015) in R (R Development Core Team 2008). Our models included Case and Ellipsis as fixed predictors, and Participant and Item as random effects.

The mean acceptability judgments are given in Table 1 and plotted in Figure 1. The linear mixed model revealed a significant main effect of Case ($p < 0.001$) and a significant interaction between Ellipsis and Case ($p < 0.001$). As Table 1 and Figure 1 show, there is a clear contrast (6.25 vs. 2.06) between grammatical controls (condition (d), with the nominative and no gapping) and ungrammatical controls (condition (c), with the accusative and no gapping), which offers us the ideal setting to evaluate the acceptability of the other conditions. Overall, the participants preferred the nominative form of the pronominal subject in comparatives, and, if the subject of the comparative bore a nominative form, the participants preferred repeating the verb instead of having gapping (6.25 vs. 4.72), a tendency which does not conform to the Obligatory Gapping Strategy postulated by Reglero (2006) for Spanish comparatives. Even though participants preferred the nominative form on the subject remnant, we cannot say that the accusative form was ruled out on the subject remnant (as Van Peteghem 2009 assumes), since the condition (a) with the accusative on the subject remnant and gapping was rated significantly higher

than the ungrammatical controls (4.17 vs 2.06).

	Accusative	Nominative
Ellipsis	4.17	4.72
Verb	2.06	6.25

Table 1: Mean acceptability judgments for the 4 experimental conditions

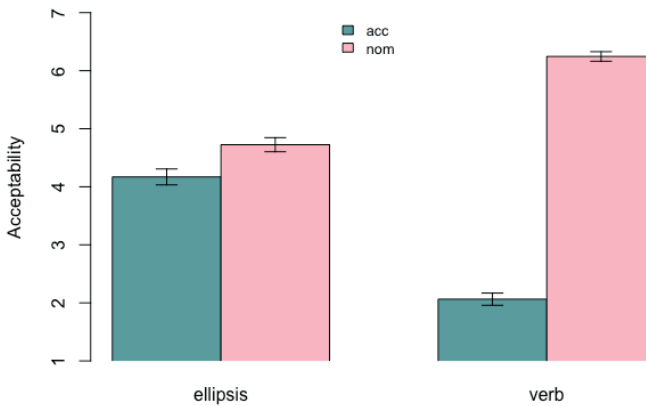


Figure 1: Mean acceptability judgments for the 4 experimental conditions

We conducted additional analyses by taking into account the animacy factor. Our models included the interaction of Case, Ellipsis, and Animacy as fixed predictors, and again Participant and Item as random effects.

The mean acceptability judgments are given in Table 2 and plotted in Figure 2. The linear mixed model revealed a significant negative main effect of Ellipsis ($p < 0.05$), a significant main effect of Case ($p < 0.001$), a significant Ellipsis*Case interaction ($p < 0.001$), and crucially, a significant Ellipsis*Case*Animacy interaction ($p < 0.001$). As Table 2 and Figure 2 show, comparatives get the highest scores (6.25) when their subject displays a nominative form and there is no gapping, and the lowest scores (2.04) when their subject has an accusative form and there is no gapping, irrespective of the animate/inanimate status of their complement. With ellipsis, the picture becomes more nuanced. Crucially, when the second remnant (e.g., the direct object) is animate, the subject remnant is much more acceptable with the nominative than with the accusative case (5.21 vs 3.79); moreover, when the second remnant is inanimate, there is no clear preference for any of the two cases: the subject remnant with the accusative case is roughly as acceptable as the one with the nominative

(accusative: 4.63 *vs* nominative: 4.32). Overall, we thus observe an asymmetry between the nominative and accusative marking of the subject remnant with respect to the animacy of the second remnant: gapping is most preferred in comparatives when the subject remnant bears a nominative form and is followed by an animate object, and it is less preferred when the subject remnant bears an accusative form and is followed by an animate object. Once again, we do not observe the preference for ellipsis in gapping comparatives (*pace*, Reglero 2006).

	Ellipsis		Verb	
	Accusative	Nominative	Accusative	Nominative
Animate	3.79	5.21	2.30	6.22
Inanimate	4.63	4.32	1.78	6.27

Table 2: Mean acceptability judgments for the 4 experimental conditions, including animacy

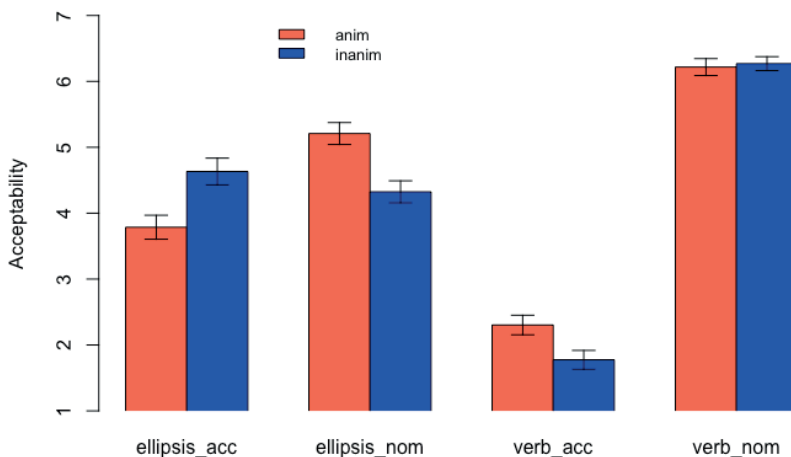


Figure 2: Animate vs. inanimate distinction in the 4 experimental conditions

In addition to linear mixed-effect models (Bates *et al.* 2015), we also used cumulative link models (Christensen 2018), which are well suited for ordinal-scale observations, falling in an ordered finite set of categories. As our data are ordinal (given the rating 7-point Likert scale), a cumulative link model is thus more appropriate than linear mixed-effect models, which are better suited for continuous dependent variables. However, both linear mixed-effect model (the R-package *lmer*) and cumulative link model (the R-package *ordinal*) on our participants' acceptability ratings reveal a significant interaction between ellipsis, case, and animacy ($p < 0.001$).

Our experimental results confirm the starting hypothesis: in elliptical comparatives with two remnants, the pronominal subject remnant displays a nominative/accusative alternation (*pace*, Van Peteghem 2009), which is not free (*pace*, Zafiu 2013), but rather conditioned by the animacy of the second remnant: if the second remnant is inanimate, participants prefer the accusative marking on the pronominal subject, a case marking which otherwise obligatorily applies to single-remnant comparatives, reduced to a pronominal subject remnant. By contrast, if the second remnant is animate, participants choose the nominative strategy and strongly disprefer the accusative marking on the pronominal subject remnant. Overall, this shows that the presence of a second remnant in an elliptical comparative plays a very important role in determining the case marking strategies which are available for the subject remnant.

3.5. General discussion and post-hoc analysis

From a theoretical perspective, the case alternation assessed by the experimental results for Romanian gapped comparatives challenges the mainstream deletion-based analysis, as connectivity effects, such as case matching effects, are not always observed. On the other hand, these puzzling data favour a construction-based analysis in terms of fragments (cf. Ginzburg & Sag 2000), which has no expectations for such connectivity effects⁸. In this fragment-based approach, the gapped comparative does not contain a predicative verbal head, so it does not have a full syntactic structure. The absence of a verbal head in the gapped comparative enables the case alternation we observed on subject remnants, in particular the possibility to have a subject remnant bearing the accusative case (which otherwise is ungrammatical when a verbal head is present). The gapped comparative fragment is reduced to a cluster of remnants (i.e., a sequence of phrases which are not related by functional relations), with propositional semantics⁹. The semantic content of a gapped comparative depends on: (i) the type of fragment (in our case, a fragmentary comparative, introduced by a specific comparative marker that contributes a comparative semantics), (ii) the literal content of the cluster of remnants, and (iii) contextual information, provided by the source (full) clause¹⁰. Once a fragment is uttered, a search is initiated in order to find the appropriate correlates

⁸ In this paper, we focus on case alternation, but there are other pieces of evidence in favour of a fragment-based analysis (see Bilbiie 2021 for Romanian, Amsili & Desmets 2008 et Amsili *et al.* 2021 for French).

⁹ For more details about the notion of cluster and its relevance for other related constructions, see Mouret (2006) and Bilbiie (2017).

¹⁰ Providing a full theoretical account of the fragment-based analysis goes beyond the scope of this paper. For an exhaustive analysis of gapping in terms of fragments, see Abeillé *et al.* (2014) and Bilbiie (2017).

for its remnants. According to Culicover & Jackendoff's (2005) indirect licensing mechanism, the morphosyntactic features of the fragment do not play a significant role in this search. Such a fragment-based analysis is compatible with a cue-based theory of sentence processing, as proposed for case-matching effects under clausal ellipsis by Nykiel *et al.* (2022). They experimentally show that case is non-locally licensed on fragments, so it is licensed outside of the ellipsis site, via a cue-based retrieval mechanism (cf. Parker *et al.* 2017) compatible with a direct interpretation approach. Under such an account, the grammar does not directly impose a case-matching requirement on remnants and correlates, instead permitting a limited amount of variation.

We should now find a possible explanation for the preferences we observed with respect to the case marking of the subject remnant in the presence of a second remnant in gapped comparatives. This case alternation could receive an explanation in terms of processing.

Sag *et al.* (1985) observe that gapping in general can give rise to acceptability problems if a gapped sequence with multiple remnants contains the same type of remnants, e.g., all are NPs; the low acceptability of such examples could be explained "by appealing to the processing difficulty associated with sequences of NPs found in ellipsis contexts" (Sag *et al.* 1985: 157). Therefore, one could infer that gapping would be more acceptable if both remnants are clearly dissociated by a linguistic means, e.g., case marking or a different semantic type. This immediately explains why gapping is most preferred in comparatives when the subject remnant bears a nominative form and is followed by an animate object, since in this particular case we have an explicit case marking dissociation (nominative subject vs. accusative object), the accusative animate object usually bearing the differential object marking *pe* (see Hill & Mardale 2017 a.o.). This processing constraint also immediately explains why gapping is less preferred when the subject remnant bears an accusative form and is followed by an animate object. In this case, there is a redundancy of case marking: both the subject and the object remnants bear the accusative case. Therefore, if both remnants have the same semantic type in terms of animacy, i.e., both are animate, one should have different case marking in order to disambiguate. On the other hand, if remnants do not have the same semantic type in terms of animacy, namely the subject is animate and the object is inanimate, there is no significant acceptability difference in terms of case marking.

In order to better observe the weight of case marking, we should pay a special attention to the marking of the animate object, and compare animates bearing the differential object marking (DOM) *pe* and animates that are simple NPs. As half of our animate items are DOM-marked, while the other half of our animate items are not marked (see (16) above), we did a post-hoc analysis in order to measure the effect

of marking. The mean acceptability judgments for the three categories (namely, DOM_animates, NP_animates and inanimates) are given in Table 3 and plotted in Figure 3. It seems that, in addition to animacy, the marking of the second remnant plays a role too, as is shown by the gradience we observed across the three categories. However, at this stage, we cannot enter our data in a statistical analysis, as the number of the three categories is not balanced: inanimate observations are twice as many as any of the two categories of animates. Therefore, we leave this marking issue for a further experiment.

	Ellipsis		Verb	
	Accusative	Nominative	Accusative	Nominative
Animate_DOM	3.42	5.82	2.4	5.98
Animate_NP	4.09	4.49	2.18	6.42
Inanimate	4.63	4.32	1.78	6.27

Table 3: Mean acceptability judgments for the 4 experimental conditions, including animacy and marking

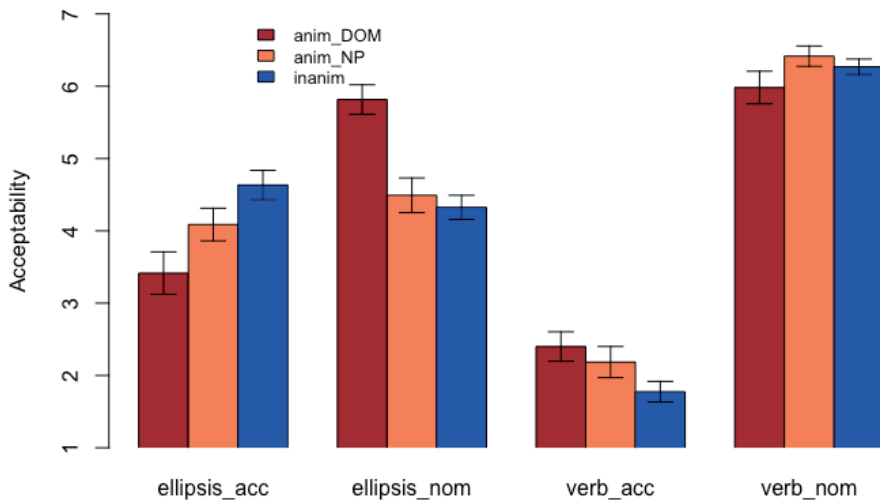


Figure 3: Animacy and marking in the 4 experimental conditions

For now, until we do a further experimental investigation on the interaction between animacy and the type of marking of the second remnant, we conclude that the animacy of the second remnant influences the case marking strategies on the subject remnant in Romanian gapped comparatives.

The fact that the animacy of the second remnant is involved in accounting for the preferences we observe with respect to case marking

on the first remnant is not surprising. Research in descriptive and theoretical linguistics has extensively shown the role of animacy in the grammars of the world's languages (Lamers *et al.* 2008, Nelson & Vihman 2019 a.o.), variations in animacy being in many cases associated with variations in syntax.

Based on our experimental results, we conclude that case marking strategies on the subject remnant in Romanian gapped comparatives constitute an interface issue, bringing into play syntax and semantics. It is not surprising that speakers manifest preferences with this kind of linguistic phenomena; the gradience effects are indeed expected with 'soft' constraints, which are at the interface between syntax and other domains, unlike 'hard' constraints, which are usually purely structural, cf. Sorace & Keller (2005). According to Bresnan *et al.* (2001), 'hard' constraints are categorical and binary, determining the grammaticality of a linguistic structure (i.e., a sentence can be either grammatical or ungrammatical), whereas 'soft' constraints are non-categorical and non-binary, dealing rather with the acceptability of a linguistic structure (i.e., a sentence can be more or less acceptable).

As discussed in Thuilier *et al.* (2020), in some languages, animacy is a 'hard' grammatical constraint, whereas, in other languages, animacy is a 'soft' constraint (see also Bresnan *et al.* 2001). The former case is illustrated by Sesotho, a Bantu language, where animacy affects word order; in particular with ditransitive verbs, the animate complement must precede the inanimate one (compare (18a) and (18b)).

- (18) a. ke-phehétse ngoaná lijó (Morolog & Hyman 1977: 202-203)
 1sg-cooked child food
 'I cooked food for the child.'
 b. *ke-phehétse lijó ngoaná
 1sg-cooked food child
 'I cooked food for the child.'

On the other hand, animacy is a 'soft' constraint in English. The fact that animacy can be implied in soft constraints has been extensively studied for the dative alternation in English (Bresnan *et al.* 2007, Bresnan & Hay 2008, Bresnan & Ford 2010). Corpus and experimental data show that speakers prefer the double object construction (19a) if the recipient is animate, and the prepositional construction (19b) if the recipient is inanimate.

- (19) a. She gave [her mother] [a smile].(Thuilier *et al.* 2020: 3)
 b. She gave [a great deal of thought] [to her situation].

Based on our experimental findings, we can conclude that animacy is a 'soft' constraint in Romanian gapped comparatives as

well. The animacy of the second remnant in gapped comparatives determines the choice between accusative and nominative case for the marking of the subject remnant. Therefore, we observe animacy effects interacting with case marking in a gradient way.

4. Conclusion

This paper presents an experimental study on case marking strategies of the subject remnant in Romanian elliptical comparatives with two remnants. Whereas in elliptical comparatives with a single remnant, the pronominal subject always bears the accusative case, in gapped comparatives (with two remnants), the pronominal subject displays a case alternation (nominative/accusative), challenging the mainstream deletion-based analysis and arguing for a constructionist fragment-based account. Based on an acceptability judgment task, we showed that the case alternation of the subject remnant is conditioned by the semantic factor of animacy of the second remnant. If the second remnant is inanimate, speakers prefer the accusative case on the pronominal subject, like in single-remnant comparatives. On the other hand, if the second remnant is animate, speakers strongly prefer the nominative case, whereas the accusative case is degraded. The main role that the second remnant plays with respect to the case alternation of the first (subject) remnant can be accounted for by appealing to a processing explanation (e.g., if both remnants have the same semantic type in terms of animacy, i.e., both are animate, one should have different case marking in order to disambiguate).

This study shows that animacy may be involved in much more linguistic phenomena than usually assumed, thus confirming the quote by Dahl & Fraurud (1996: 47): “Animacy, or the distinction between animate and inanimate entities, is so pervasive in the grammars of human languages that it tends to be taken for granted and become invisible”.

Moreover, our experimental study shows the need to take into account the gradient nature of linguistic data. If one takes the example of the major methodological tool which has been used in syntax, namely grammaticality judgments, it appears that, apart from extreme cases of grammaticality and ungrammaticality, speakers’ judgments are naturally gradual and not categorical. Unlike the theoretical notion of ‘grammaticality’ (referring to whether a given sentence conforms to the grammatical rules of a given language) which is binary, acceptability is a gradable notion (see also Leivada & Westergaard 2020 and the special issue edited by Tubau *et al.* 2020). In particular, our experimental study argues that only an approach based on acceptability judgments can provide a more fine-grained

insight into the phenomenon of subject case alternation in Romanian gapped comparatives.

This approach goes beyond the traditional paradigm of generative grammar dealing with competence phenomena, as it integrates preferences observed in usage, i.e., performance phenomena. In this perspective, grammar includes not only the categorical ‘hard’ constraints dealing with the grammaticality of a linguistic structure, but also non-categorical ‘soft’ constraints playing on acceptability and favoring the use of some structure over the other. One such ‘soft’ constraint is animacy in Romanian, when it comes to account for the preferences we observe with case alternation of the subject remnant in gapped comparatives.

From a purely methodological perspective, our study shows the importance of experimental methods, which provide more reliable and richer data (Wasow & Arnold 2005, Gibson & Fedorenko 2013, Sprouse *et al.* 2013), as quoted by Borsley (2005: 1479):

It is not really clear when informally gathered intuitions provide a satisfactory basis for research and when more formal methods of data gathering are necessary. [...] However, some things are fairly clear. It is clear that informally gathered intuitions are not always a satisfactory basis for syntactic theorising. It is also clear that experimental methods are sometimes necessary and may provide richer data than informal methods. [...] Above all, it is clear that questions about data are more important than is sometimes assumed.

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