AGAINST SYNTACTIC RECONSTRUCTION IN ROMANIAN GAPPING

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Abstract: It has often been argued that non-constituent coordination (such as argument cluster coordination, right node raising and gapping) involves ellipsis. Focusing in this paper on gapping constructions, we provide empirical evidence drawn from Romanian against strict parallelism and syntactic reconstruction (achieved by a deletion process) and argue in favor of a surface and semantically-oriented approach. We propose a simpler syntactic analysis in terms of *fragment*, conceived as a fully grammatical structure that is a proper part of the grammar.

Keywords: ellipsis, reconstruction, fragment, gapping

1. Introduction[*]

The data in (1) illustrate the phenomenon usually referred to as *gapping*, in which a complete sentence is combined with some elliptical one (or more), missing (at least) its main verb and optionally other elements (complements, subject or adjuncts), while two other constituents are left overt (Ross 1967). One of the overt constituents is typically (but not necessarily) the subject of the clause.

(1) a. [John likes apples] and [[Bob] [bananas]].
b. [John tried to begin to write a poem] and [[Bill] [a song]].
c. [John will bring some flowers to Mary] and [either [[Bill] [some wine]] or [[Jane] [some whiskey]]].
d. [Jim flew to London on Sunday] and [[Mary] [on Thursday]].

It is generally assumed that there is a correlation between word order and the direction of gapping across languages. Thus, head-initial languages, like English, French, Romanian, etc., have gaps in the second conjunct (i.e. forward gapping), while in verb-final languages, like Japanese or Korean, the gapped constituent comes in the first conjunct (i.e. backward gapping).

Non-constituent coordination phenomena remain a challenge for both derivational and non derivational frameworks relying on phrase structure, the most widespread view being that apparent non-constituents involve some elliptical process. The basic issue raised by gapping constructions is that which is raised by ellipsis in general, namely to determine the level at which the missing material is to be reconstructed.

Analyses of elliptical constructions fall into three general types characterized by the level of information at which they assume that the resolution of ellipsis takes place. According to the syntactic approach, one way to analyse the gapping cases is by appealing for a covert syntactic structure which is present in the ellipsis site at some level of derivation; as a result, gapping is analysed as a coordination of two full sentences. This kind of approach typically involves deletion of syntactic material in the ellipsis site, as we can see in (2a) (Ross

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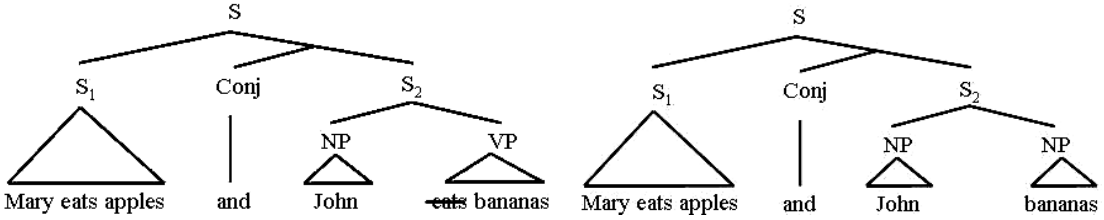
1970, Sag 1976, Hartmann 2000, Chaves 2005). However, on the basis of negation scope and some constituency data, Johnson (1994) proposes a theory of gapping without deletion, consisting in across-the-board raising of the shared material, and an asymmetric extraction of the material preceding the shared one in the first sentence (2b).

(2) a. John likes apples and (Bob ~~likes~~ bananas)$_{Sentence}$
b. (John$_i$ likes$_j$) (i j apples) and (Bob j bananas)

According to the second type of analysis, i.e. a semantic approach, a gapping structure is the combination of a (full) sentence with a fragment. In this case, resolution of the fragment content applies at a purely semantic level by means of an equation involving higher order lambda terms (cf. Dalrymple et al. 1991, Dalrymple 2005). Finally, according to the third approach, i.e. a syntax-semantics interface, the fragment is analysed in terms of semantic reconstruction and syntactic parallelism constraints (Culicover and Jackendoff 2005).

We begin by reviewing the main distributional properties of gapping, focusing on syntactic and semantic constraints. We then provide empirical evidence against elliptical approaches that rely on strict structural parallelism or syntactic reconstruction, as schematized in (3a), our alternative being a fragment-based analysis, such as (3b).

(3) a. Full-sentence analysis b. Fragment-based analysis



As for the terminology we will use in this article, we will refer to the 'elided' material in the second conjunct as the *gap*[1], to the overt constituents in the elliptical phrase as *remnants*, to the corresponding constituents in the first conjunct as *correlates* or *correspondents*, and to the full sentence providing the interpretation for the elliptical phrase as the *source*.

2. Some general properties of gapping phenomena

The restrictions operating on gapping include almost all levels of linguistic analysis. We only mention some of main semantic, syntactic and prosodic aspects.

2.1 Main semantic constraint: a contrast relation

Remnants and correlates together must be *contrast pairs*, i.e. in a contrastive focus relation (cf. Kuno 1976, Sag 1976, Hartmann 2000, Winkler 2005, Repp 2008, among others). There are always at least two contrast pairs in gapping. As Repp (2008) mentions, appropriate contrast can be established between elements of a well-defined alternative set (different agents, different locations, different times, etc.). Consequently, contrasting elements from different sets (4a) or contrasting only one pair (4b) results in ungrammaticality.

[1] For the sake of simplicity, the material corresponding to the gap in the first conjunct is underlined in most examples.

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(4) a. ??Ioana mănâncă mere, iar Maria la miezul nopții.
Ioana eats apples and Maria at the midnight
b. *Maria$_i$ va participa la concursul de fotografie, iar [proasta asta]$_i$ la festivalul de muzică (deşi n-a cântat niciodată).
Maria$_i$ will-take part in the photography competition, and [this stupid woman]$_i$ in the music festival (despite the fact that she has never sung)

2.2 Main syntactic constraint: major constituency

Remnants must be major constituents (cf. Hankamer 1973), i.e. they are not necessarily sisters, but must be dependent on **some** verb, matrix or not, i.e. either on the antecedent verbal head (5a) or on a verb contained in the argument of the antecedent verb (5b) (see Gardent 1991), while island constraints are maintained (see below, section 2.4). Thus, they must be legitimated by one of the predicative heads of the source, respecting the licit word order in the grammar.

(5) a. John likes apples, and Mary bananas.
b. John wants to try to begin to write a novel, and Mary a play.

It is generally assumed that one cannot have as remnants "subparts of major constituents" (Hankamer 1973, Neijt 1979), hence the impossibility to have as remnant a noun without its determiner (6a) (i.e. NPs are compacted domains, cf. Chaves 2005) or a NP without its prepositional head (6a-b).

(6) a. Maria vorbeşte cu un băiat, iar Dan *(cu) *(o) fată.
Maria talks with a boy and Dan with a girl
b. Paul merge la Paris, iar Ion *(la) Londra.
Paul is-going to Paris and Ion to London

However, we can find some examples where PPs are compacted and liberated from the NP domain:

(7) a. Eu citesc [un roman [de Preda]] şi tu [de Slavici].
I read a novel by Preda and you by Slavici
b. Ion cumpără [o carte [de istorie]], iar Maria [de geografie].
Ion buys a book of history and Maria of geography
c. Ion este [un mare colecționar [de timbre]], iar Maria [de monede].
Ion is a great collector of stamps and Maria of coins

2.3 Prosodic constraint: **contrastive intonation**

Every semantic contrast must be realised phonologically, with appropriate pitch accent and phrasing (Hartmann 2000). This is reflected in the intonation aspect of gapping, which requires that both remnants and their correlates are stressed (Sag 1976). The verb typically is de-accented. As for phrasing, the two conjuncts are separated by a clear intonational phrase break (cf. Hartmann 2000, Féry and Hartmann 2005, Winkler 2005). Moreover, 'absent' elements must be contextually given.

2.4 Island constraints

It is usually assumed that gapping is island-sensitive, i.e. the remnants in the elliptic clause may not be contained in a syntactic island, whereas other non-constituent coordination

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phenomena can be less restricted (e.g. right node raising[2]). Thus, we can see that gapping in the complex NP island (8a), *wh*-island (9a) and PP island (10a) is completely out, while RNR can violate (at least) these islands (8b-9b-10b). These facts call for a detailed analysis of the differences between gapping and other ellipsis types in terms of island constraints.

(8) a. *Ion face afaceri cu **oamenii** care vând terenuri, iar Maria case. (gapping)
Ion does business with people who sell lands and Maria buildings
b. Cunosc **oameni** care vând _ şi alţii care cumpără acţiuni la bursă. (RNR)
[I] know people who sell _ and others who buy stock options

(9) a. *Eu vreau să fac **ce** îmi spune mama, iar ea tata. (gapping)
I want to do what Mom tells me and she Dad
b. Mă întreb **cine** poate cumpăra _ şi cine poate vinde acţiuni la bursă. (RNR)
[I] wonder who could buy _ and who could sell stock options

(10) a. Eu voi vorbi cu Maria, iar tu *(cu) Ion. (gapping)
I will talk with Maria and you with Ion
b. Ion a votat pentru _, iar Maria a votat contra acestei propuneri. (RNR)
Ion voted for _ and Maria voted against this proposal

Gapping obeys other locality constraints too, such as the subject island (11), S-boundaries (12) or Left Branch Constraint (i.e. no remnant without its obligatory specifier) (13):

(11) *[A citi romane] e pasiunea lui Ion, iar [poeme] pasiunea Mariei.
reading novels is Ion's passion and poems Maria's passion

(12) a. ??Paul crede **că**[3] Iliescu va câştiga alegerile, iar Maria Băsescu.
Paul thinks that Iliescu will win the-elections and Maria Băsescu
b. *Paul plânge **pentru că** l-a părăsit prietena, iar Maria soţul.
Paul mourns because his-girlfriend left him and Maria her-husband

(13) a. *Dan mi-a spus **ce** roman a citit, iar Maria piesă de teatru.
Dan told me which novel he had read and Maria play
b. *Dan citeşte **un** roman, iar Maria poem.
Dan is-reading a novel and Maria poem

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[2] In right node raising, an elliptical clause missing (at least) an argument precedes a full clause which determines its interpretation (thus, the shared material appears at the right periphery of the sentence).

[3] There are some differences in terms of acceptability between *că* and *să* ('that'). It's quite difficult to have gapping across S-boundaries with the complementizer *că*, but this is fine with *să*:

(i) Ion a plecat **să** cumpere bere, iar Maria pizza.
Ion has gone to buy beer and Maria pizza

We can explain this difference, by assuming that *că* and *să* have a different syntactic status, i.e. *că* is a complementizer, while *să* is a preverbal clitic, because of distributional differences observed bellow:

(ii) a. Ion crede **că** Lucia vine.
Ion thinks CA Lucia is-coming
b. Ion crede **că** vine Lucia.
Ion thinks CA is-coming Lucia

(iii) a. *Ion vrea **să** Lucia vină.
Ion wants SA Lucia come.SUBJ
b. Ion vrea **să** vină Lucia.
Ion wants SA come.SUBJ Lucia

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2.5 Other distributional properties

The standard view is that gapping is restricted to coordinations (simplex / omnisyndetic / asyndetic, cf. (14), and comparatives (15), being excluded in regular subordinate structures (16):

(14) a. (**Fie)** Dan ne va cânta la vioară, (**fie**) Maria la pian.
Either Dan would play for us the violin, or Maria the piano
b. Ioana vine azi, Maria mâine.
Ioana is-arriving today, Maria tomorrow

(15) a. Ion o iubeşte pe Maria **mai mult decât** ea pe el.
Ion loves Maria more than she him
b. Iubesc florile **precum** Ioana pisicile.
[I] love the-flowers like Ioana the-cats
c. Ioana a mâncat **mai multe** mere **decât** Ion pere.
Ioana ate more apples than Ion pears

(16) a. ??Maria mănâncă o pară, {**înainte ca / în timp ce / după ce**} Ion un măr.
Maria is-eating a pear, {before / while / after} Ion an apple
b. *Maria cântă la vioară, {**pentru că** / **deoarece** / **întrucât** / **deşi**} Ion la pian.
Maria plays the violin, {because / since / although} Ion the piano

Moreover, gapping can appear in the dialogue, in what has been referred to as short answers. In these contexts, one can have either mono or double gapping, depending on whether we have only a gapped constituent (17) or multiple fragments (18).

(17) a. A: Ţi-a adus Maria cartea?
Did Maria give you back the book?
B: Da, dar nu şi Ion dicţionarul.
Yes, but not Ion the dictionary
b. A: Vorbiţi franceza?
Do you speak French?
B: Da, iar fratele meu şi spaniola.
Yes, and my friend also Spanish

(18) A: Cine la ce instrument cântă?
Who what instrument plays
B: Maria la vioară, iar Ion la chitară.
Maria the violin and Ion the guitar

There are similar cases of gapping in some "elliptical" constructions, such as sluicing[4] (19a), polar ellipsis[5] (19b-c), exceptive adjuncts (19d) or a special kind of relatives, i.e. partitive relative adjuncts (19e):

(19) a. Cineva a sărutat pe cineva, dar nu ştiu [cine pe cine].
Someone kissed someone but [I] don't know who whom

[4] Sluicing refers to sentences in which the clausal sub-constituent of a question is elided, leaving a "floating" *wh*-phrase (Ross (1967).

[5] Polar ellipsis belongs to the larger class of "incidental" conjuncts. Different terms in the literature: "split" conjuncts, "end attachment" coordination, etc. Abeillé (forthcoming) distinguishes between "split" conjuncts and polar ellipsis mainly on the basis of the embedding criterion. Moreover, polar ellipsis always involves a "polar" adverb (an additive adverb like *şi* 'too, also' or a restrictive one like *nici* 'neither').

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b. Nu va veni Ion la botez, şi [**nici** Maria la nuntă].
not will come Ion to christening and neither Maria to marriage
'Ion will not come to the christening ceremony, nor Maria to the marriage'
c. Ion merge la botez, şi [**şi** Maria la nuntă].
Ion is-going to christening and also Maria to marriage
d. Niciun elev nu-şi făcuse temele, [mai puțin Ion tema la engleză].
No student had done his homework, except Ion the English paper
e. Mai mulți prieteni au plecat în străinătate, [dintre care 2 la Roma].
Many friends have gone abroad, among which 2 to Rome

Gapping can apply iteratively in sentences containing more than two conjuncts. In these cases, the gap can apply either in all conjuncts except the initial conjunct (20a-b), or only in the last conjunct[6] (20c):

(20) a. Dan ne va cânta la vioară, iar apoi [fie Maria la pian, fie Ion la trompetă].
Dan will play for us the violin, and then either Maria the piano, or Ion the trumpet
b. La petrecere, Dan a băut bere, Maria vin, iar Ioana suc.
At the party, Dan drank beer, Maria wine, and Ioana juice
c. La petrecere, Dan a băut bere, Maria a băut vin, iar Ioana suc.
At the party, Dan drank beer, Maria drank wine, and Ioana juice

More than two remnants can appear in each target clause[7]:

(21) a. De Paşte, părinții au mers la mare cu bunicii, iar copiii la munte cu prietenii.
At Easter, parents went to the seaside with grandparents and children to the mountains with their friends
b. Seara, Ion vorbeşte cu prietena lui la telefon, iar Maria cu amantul pe messenger.
In the evening, Ion talks to his girlfriend on telephone and Maria to her lover on messenger

A cross-linguistic perspective shows a notable difference between English and French on one hand, and Romanian on the other hand: if English and French permit auxiliary elision (22), Romanian doesn't[8] (23):

(22) a. Kim will lead the party and Pat bring up the rear.
b. Paul a écrit un roman et Marie fini sa thèse.
Paul has written a novel and Marie finished her thesis
(23) a. *Maria va citi o poveste, iar Ion recita o poezie.
Maria will read a story, and Ioana recite a poem
b. *Dan a mâncat un sandviş, iar Maria băut o bere.
Dan has eaten a sandwich, and Maria drunk a beer

[6] It is more difficult to have the gap only in the medium position:
(i) ??La petrecere, Dan a băut bere, Maria vin, iar Ioana a băut suc.
At the party, Dan drank beer, Maria wine, and Ioana drank juice
[7] If speakers don't accept some examples with more than two remnants, reduced acceptability is due to some processing constraints.
[8] This behavior in gapping cases could be an evidence for treating Romanian auxiliaries as clitics.

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The elided material can be discontinuous (24a) or in the final position (24b):

(24) a. De Crăciun, Ion i-a dat o ciocolată Mariei, iar Dan un buchet de flori.
For Christmas, Ion gave a chocolate to Maria, and Dan a bunch of flowers
b. In sectorul 4, Popescu are şanse să câştige, iar în sectorul 1, Păunescu.
In the 4th sector, Popescu has chances to win, and in the 1st sector, Păunescu

The gapped conjunct prototype is the sequence subject-complement; but there are cases where we don't necessarily have a subject as remnant, e.g. the sequence topic-complement:

(25) a. Pe câteva dintre ele le taie cu cuțitul, pe celelalte cu briceagul.
Some of them [one] cuts with a knife, the others with a penknife
b. La Paris am fost în 2001, iar la Roma în 2004.
To Paris [I] went in 2001, and to Rome in 2004

These cases differ structurally from their counterparts in argument cluster coordination[9] (26): constituents of the gapped clause don't appear necessarily at the same level, while clusters in an ACC sequence do.

(26) a. Bunicul taie [pâinea cu cuțitul], iar [roşia cu briceagul].
Grandpa cuts the bread with a knife, and the tomato with a penknife
b. Am fost [la Paris în 2001] şi [la Roma în 2004].
[I] went to Paris in 2001 and to Rome in 2004

Finally, gapping can appear in all four kinds of clauses – declarative, interrogative, imperative or exclamative, the semantic content type being a proposition, a question, an outcome or a fact respectively (cf. Ginzburg and Sag 2000), which leads us to consider that the remnants have a clausal interpretation:

(27) a. Mă întreb cine va merge la Ion şi cine la Maria.
[I] wonder who will go to Ion's and who to Maria's
b. De ce Ioana a primit o carte, iar Maria doar un stilou?
Why Ioana received a book, and Maria only a pen
c. Intotdeauna scrie cu mâna dreaptă, niciodată cu stânga!
Always write with your right hand, never with your left
d. Ce rochie frumoasă are Ioana şi ce blugi jegoşi soțul ei!
What a pretty dress has Ioana and what horrible jeans her husband

3. Problems with strict syntactic parallelism

The notion of structural parallelism of remnants and correlates is assumed to play an important rule in the analysis of gapping. Generally, one considers that the remnants of a fragment obey morpho-syntactic constraints required by the full sentence, i.e. constraints on category, case, preposition, complementizer, binding constraints, etc. (Ross 1967): "existence

[9] Argument cluster coordination (ACC) is characterized by two clusters involving sister constituents, occurring at the same level, to the right of the predicate, and depending on the same verb. For more details, see Mouret (2007).

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of connectivity phenomena in which the target displays a certain syntactic parallelism with the source" (Culicover and Jackendoff 2005: 298).

However, Romanian data show that one doesn't have a strict syntactic parallelism in gapping constructions. Syntactic matching operations (e.g. feature matching) are different from the kind of matching required in a gapping coordination (cf. Repp 2008). The constituents of the target may differ from those in the source clause, according to grammatical category (28), number of realized arguments (29) or word order (30), but every remnant must obey subcategorization rules imposed by the missing predicate and all order variations must be legitimate for the language in question. In other words, these variations are permitted provided the elements in the gapped clause match the requirements of the source predicate(s).

(28) a. Marian citeşte [$_{NP}$ ziua], iar Maria [$_{PP}$ pe-ntuneric].
Marian reads during the day and Maria at night
b. Mie îmi place [$_{NP}$muzica], iar prietenului meu [$_{VP}$să facă sport].
I like music and my boyfriend doing exercise

(29) a. Ion cumpără un ziar, iar Maria o jucărie pentru fetița ei.
Ion buys a newspaper and Maria a toy for her daughter
b. Dan merge la munte, iar Maria tot timpul la mare.
Dan goes to the mountains, and Maria always to the seaside

(30) a. Dimineața spăl eu vesela, iar seara Ioana.
in the morning wash I the dishes, and in the evening Ioana
b. Dimineața spăl vesela eu, iar seara Ioana.
in the morning wash the dishes I, and in the evening Ioana
c. Dimineața eu spăl vesela, iar seara Ioana.
in the morning I wash the dishes, and in the evening Ioana
d. Eu spăl vesela dimineața, iar Ioana seara.
I wash the dishes in the morning, and Ioana in the evening
e. Eu spăl vesela dimineața, iar seara Ioana.
I wash the dishes in the morning, and in the evening Ioana
'I wash the dishes in the morning, and Ioana in the evening.'

Furthermore, we observe the lack of strict parallelism in cases where remnants do not have overt parallel constituents in the source clause. A more abstract argument structure must be considered, for example, in cases with subject or object drop, where the remnant has as correlate a "weak" form (an 'empty' pronoun in (31) or an intensifier adverb with affixal status, cf. Barbu (2004), as in (32): *mai* 'still', *cam* 'rather', *tot* 'still')**:**

(31) a. In 5 minute, termin ţigara şi **Ion** cafeaua.
In 5 minutes, [I]'m finishing the cigarette, and **Ion** the coffee
b. Lunea merg la film, iar **sora mea** la muzeu.
on Mondays, [I] go to the movies, and **my sister** to the museum

(32) a. Maria **mai** citeşte, dar Ion **niciodată nimic**.
Maria AdvAff(frequency) reads, but Ion never nothing
b. Maria **cam** exagerează, dar Ion **niciodată**.
Maria AdvAff(frequency) exaggerates, but Ion never
c. Maria a **mai** greşit testul, dar colega ei **deloc**.
Maria AdvAff(intensity) made errors at exam, but her mate not at all
d. Marian **tot mai** citeşte, dar prietena lui **absolut nimic**.
Marian AdvAff(frequency) reads, but his girlfriend nothing at all

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Examples mentioned in this section show us that gapping structures involve more flexible syntactic parallelism. Merchant (2001) claims that the identity requirement is more semantic (a condition on mutual entailment of the two conjuncts) than syntactic. Therefore, the gapped conjunct does not have to be compared for structural identity to that of the first conjunct.

4. Problems with syntactic reconstruction

Many analyses of elliptical constructions rely on syntactic reconstruction, assuming the presence of syntactic structure at some level in the ellipsis site. Following this kind of approach, gapping structures are analysed as "deviations" of full sentences. Thus, Ross (1970) considers that the gapped clause is derived from a complete sentence, from which some elements have been deleted. This approach has been adopted (with some adjustments) in a number of later works (Hartmann 2000, Merchant 2001 and 2004, Chaves 2005, among many others) for most elliptical constructions. For example, Merchant (2001 and 2004) proposes a PF deletion theory of ellipsis for sluicing phenomena, i.e. movement to a peripheral position (specifier position of a functional projection), followed by the deletion of syntactic structure.

However, Romanian data show that syntactic reconstruction does not constitute a viable account of ellipsis, since in some cases there are important syntactic and semantic divergences between the "elliptical" constructions and their sentential correlates, which would make any ellipsis account in terms of deletion problematic. Empirical evidences can be regrouped in two main categories: evidences showing that the gapped clause is not a finite sentence and arguments showing that the missing material is not always a literal copy of the source.

4.1 The gapped clause is not a finite sentence

Romanian requires that subordinate clauses are marked in the structure of the subordinate clause itself. However, the gapped clause cannot occur with a complementizer. Examples below become unacceptable if we repeat the relative marker *(pe) care* in relative clauses (33) or the complementizer *că* 'that' in completive clauses (34) (for the French examples, see Godard 1989):

(33) a. Poezia **pe care** eu o am de învățat și **(*pe care)** Maria de comentat e dificilă.
the poem which I have to learn and Maria to comment is difficult
b. un copil **de care** tatăl e mulțumit, iar **(*de care)** mama mândră.
a child with whom the father is satisfied and the mother proud of

(34) a. Vreau **ca** Ion să vină azi, iar (***ca**) Petre mâine.
I want that Ion comes today, and Petre tomorrow
b. Cred **că** lui Ion îi plac merele și **(*că)** lui Paul bananele.
I think that Ion likes apples and Paul bananas

The second piece of evidence that the gapped constituent is not a finite clause involves the fact that the gapped conjunct allows for constituent negation. Elements like *şi nu*[10] 'and not' and *dar nu* 'but not' cannot be followed by tensed verbs:

[10] One must distinguish between (at least) three ***nu*** in Romanian: a phrase (adverbial) modifier – for the constituent negation, as in our examples with *şi nu* and *dar nu*, and in (ia), a second one which is an affix in the verbal complex – for the sentential negation, cf. (ib), and a third one which is an adverbial proform (i.e. a

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(35) a. DAN[11] va dormi la Maria **şi nu** Maria (*va dormi) la Dan.
Dan will-sleep at Maria's and not Maria at Dan's
b. Lui ION îi plac bananele **şi nu** Mariei (*îi plac) merele.
Ion likes bananas and not Maria apples

Moreover, the purely syntactic account encounters problems when the missing verb in the target cannot be reconstructed after non-sentential markers which can introduce the gapped clause: a range of connectives such as *ca şi, la fel ca, precum şi* 'as well as', 'in the same way', comparatives with *decât* 'than', as in example (36), may combine with a gapped clause while excluded with finite clauses (for English examples, see Culicover and Jackendoff 2005):

(36) a. Ion se comportă cu Maria {**ca (şi), la fel ca**} Marcel (*se comportă) cu nevasta lui.
Ion behaves towards Maria in the same way as Marcel towards his wife
b. Maria a muncit azi mai mult **decât** mine ieri.
Maria has worked today more than me yesterday

4.2. Missing material is not a literal copy of the source

The syntactic reconstruction approach must solve different agreement specifications (37) and pronominal clitic[12] variation (38):

(37) a. Eu iubesc animalele, iar Ioana (*iubesc / iubeşte) florile.
I like animals, and Ioana (*1sg / 3sg) flowers
b. Noi citim o carte, iar tu (*citim / citeşti) un ziar.
We are-reading a book and you (*1pl / 2sg) a newspaper

(38) a. Ion **l**-a văzut pe Dan, iar Ana (a văzut-**o** / ***l**-a văzut) pe Maria.
Ion **Cl.Masc.Sg** saw Dan and Ana (saw **Cl.Fem.Sg**/***Cl.Masc.Sg** saw) Maria
'Ion saw Dan, and Ana - Maria.'
b. Eu **i**-am văzut pe [Ion şi Maria], iar Ana (**l**-a văzut / ***i**-a văzut) pe Paul.
I **Cl.Masc.Pl** saw Ion and Maria, and Ana (**Cl.Masc.Sg** saw/***Cl.Masc.Pl** saw) Paul
'I saw Ion and Maria, and Ana - Paul.'
c. Ion **l**-a văzut pe Paul, iar Dan (**le**-a văzut / ***l**-a văzut) pe [Ana şi Ina].
Ion **Cl.Masc.Sg** saw Paul, and Dan (**Cl.Fem.Pl** saw/***Cl.Masc.Sg** saw) Ana and Ina
'Ion saw Paul, and Dan - Ana and Ina.'

An additional problem to solve is related to negation recovery. There are cases where in the full sentence we have the negative form of the verb followed by the restrictive *decât*, while in the gapped clause we only have the adverbial *doar* requiring the affirmative form

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propositional adverb) – in stripping cases (ic), for example. For more details, see Barbu (2004) and Ionescu (2004).

(i) a. Lupul îşi schimbă părul, dar **nu$_1$** năravul.
The wolf changes its fur, but not its bad habits
b. Lupul îşi schimbă părul, dar **nu$_2$**-şi schimbă năravul.
The wolf changes its fur, but [it] does not change its bad habits
c. Lupul îşi schimbă părul, dar năravul **nu$_3$**.
The wolf changes its fur, but its bad habits no

[11] Capitals mark focus.

[12] Like many Balkan languages, Romanian has clitic-doubling. In Romanian clitic-doubling, direct objects appear preceded by the preposition-like element *pe* if the referent is [+specific, +human].

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(39a). Moreover, we cannot use the restrictive *decât* in the gapped clause, but only its affirmative correspondent *doar* (39b). If we consider a deletion approach, with syntactic reconstruction of the missing verb, the use of the restrictive *decât* should be possible, but in fact it's not the case. Another set of examples involves the presence of a negative word in the gapped conjunct (*nimic* 'nothing'), while in the full sentence we don't have the negative marker *nu* on the verb (39c). It is considered that Romanian needs the negative marker *nu* in order to obtain a negative sentence. How could one reconstruct the verbal negation if it's unavailable in the source clause? In our approach, negative words are analyzed as the proper negation of the fragments (i.e. N-words are negative quantifiers), since they can appear in heterogeneous constructions, outside negative contexts.[13]

(39) a. Ion **nu** ştie **decât** engleza, iar Maria (ştie / *nu ştie) **doar** germana.
Ion NEG knows **only_NEG** English, and Maria (knows/*NEG knows) **only_POSIT** German
b. Ion **nu** a mâncat **decât** banane, iar Maria (**doar / *decât**) mere.
Ion NEG ate **only_NEG** bananas, and Maria **only_POSIT/*only_NEG** apples
c. Eu i-am cumpărat ceva de ziua lui, dar el **nimic** (*a cumpărat) de ziua mea.
I bought him something for his birthday, but he nothing-at-all for my birthday

Another piece of evidence is based on semantic problems related to referential distinctiveness of nominals. In (40a) and (41a), we have referential identity in the gapped clause, while reconstructing the nominal we have two different reference sets, e.g. (40b) and (41b).

(40) a. Maria le-a dat **la doi dintre copii** mere, iar Ion pere.
Maria gave apples **to two of the kids**, and Ion gave [them] pears
b. Maria le-a dat **la doi dintre copii** mere, iar Ion le-a dat **la doi dintre copii** pere.
Maria gave apples **to two of the kids**, and Ion gave pears **to** [other] **two of the kids**

(41) a. Maria a văzut-o **pe-o fată** în parc, iar Ion la film.
Maria saw **a girl** in the park, and Ion at the cinema
b. Maria a văzut-o **pe-o fată** în parc, iar Ion a văzut-o **pe-o fată** la film.
Maria saw **a girl** in the park, and Ion saw **a girl** at the cinema

Furthermore, as mentioned by Johnson (1994), Culicover and Jackendoff (2005) among others, the deletion approach cannot explain the scope of negation in (42a):

(42) a. Ion nu poate primi jucării şi dulciuri, iar Maria doar un buchet de flori – nu e cinstit!
Ion cannot receive toys and sweets and Maria only a bunch of flowers – it's not fair
b. Ion nu poate primi jucării şi dulciuri, iar Maria nu poate primi doar un buchet de flori.
Ion cannot receive toys and sweets and Maria cannot receive only a bunch of flowers

If (42a) was derived from (42b), we would expect it to mean [not p & not q]. Instead, it means [not (p & q)].

[13] For more details, see Iordăchioaia (forthcoming).

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Finally, we can mention an additional semantic problem with the scope of an aspectual adverb like *tocmai* 'already': in (43), the adverb *tocmai* only has scope in the first conjunct (it gives an aspectual meaning to the verb), whereas, under a deletion account, one normally could recover the aspectual adverb in the second conjunct too.

(43) Maria **tocmai** a sosit acum 5 minute, iar Ion azi-dimineață.
*Maria has **already** arrived 5 minutes ago, and Ion this morning*

To sum up this section, following Sag et al. (1985), Culicover and Jackendoff (2005) and Abeillé et al. (2008), we analyse the gapped conjunct as a fragmentary phrase without verbal head and composed by at least two categories, and not as a full sentence with invisible structure. We give more details in the next section.

5. A sketch of an analysis without syntactic reconstruction

Our general aim would be to find the minimal explanation of how a native speaker can assign an interpretation to a gapped clause, given the form and meaning of the full sentence. Such an account would rely on general principles (e.g. syntactically, sentences have structure; semantically, structures have meanings) and not special principles (e.g. sentences have elaborate invisible structure, parts of structures can be rearranged, etc.).

We consider gapping a construction-type (i.e. *constructions* = phrasal types that may introduce material that is not strictly present in the lexical elements they include, cf. Ginzburg and Sag 2000, Sag et al. 2003).

We analyse the gapped conjunct as a verbless fragment, a construction apparently available for short answers too (Ginzburg and Sag 2000). A fragment is not necessarily a clause. In order to be a clause, it must satisfy two conditions: i) the fragment interpretation must be univocal (in the context), and ii) the fragment interpretation must be of clausal type (proposition, question, outcome or fact). Gapping obeys these conditions, as we have already seen in the last part of the section 2.5., cf. example (27).

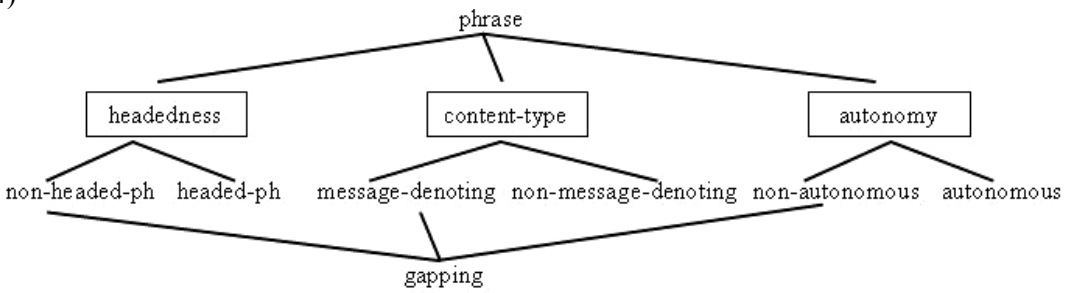
Fragments are conceived as fully grammatical structures that are a proper part of the grammar, not deviations of canonical sentences. In this way, one can avoid the need of empty elements and dispense with movement and deletion operations. A fragment is by definition an incomplete object. Syntactically, most phrases are organized around a syntactic head; if no head is identifiable from a sequence involving nevertheless phrasal properties, one can legitimately call it a *syntactic fragment*. Consequently, a syntactic fragment will be a non-headed phrase, an exocentric phrase. Furthermore, each syntactic structure has an associated semantic one. But, in the case of fragments, there is a lack of correlation between the semantic content of this phrase and its syntactic structure. The fragment is semantically and syntactically parasitic on the antecedent (Culicover (2008)).

Constructional properties of gapping can be introduced within a hierarchy of phrasal types. The hierarchy in (44) displays three dimensions of classification, as Laurens (2008) proposed for predicative verbless utterances, instead of two dimensions, as proposed by Ginzburg and Sag (2000). The first dimension, labeled HEADEDNESS, is used to distinguish headed phrases from non-headed phrases. The second one, named CONTENT-TYPE is used to distinguish phrases with a clausal content type (i.e. message) from phrases with other content types. The dimension AUTONOMY distinguishes phrases whose content is context-sensitive from phrases whose content is not context-sensitive. Therefore, we can derive the gapping construction as a non-headed phrase (it doesn't have a syntactic head), message

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denoting (some kind of message: proposition, question, outcome or fact) and non-autonomous (the fragment interpretation must be computed by referring to the interpretation of some antecedent).

(44)



Therefore, we assume that gapping fragments have just the syntactic structure apparent at the surface (cf. the tree structure in (3b)) and then we need to explain the interpretation of these elliptical clusters not on the basis of invisible structure, but with respect to antecedent structure. The interpretation for a sentence containing a gapped element is provided semantically. The semantic analysis accounts easily for many of the problems encountered by a syntactic reconstruction analysis. An example showing how semantic reconstruction is at work is figured out by Dalrymple et al. (1991) and Dalrymple (2005), by means of a semantic equality analysis. They propose that the problem of ellipsis resolution is statable equationally, in terms of higher-order unification. Consider sentence (45):

(45) Maria culege mere, iar Ioana pere.
Maria picks apples, and Ioana pears

The interpretation of the target sentence, *iar Ioana pere*, is that some property *P* holds of *Ioana pere*:

(46) ***P***(Ioana, pere)

Resolving the ellipsis consists in determining what this property is. The first step is to find some parallelism between remnants and their correspondents. In the example above, we have a parallelism between the subjects *Maria-Ioana* and another one, between the complements *mere-pere*. To find out the property *P* of the gapped conjunct, we first calculate the property *P* of the full sentence:

(47) ***P***(Maria, mere) = culege(Maria, mere)

This equation can be solved by means of higher-order unification, with the result that *P* is instantiated to the following property:

(48) $\boldsymbol{P \rightarrow \lambda x.\ \lambda y.}$ culege(**x, y**)

Roughly, the interpretation of the target clause will be:

(49) culege(Ioana, pere)

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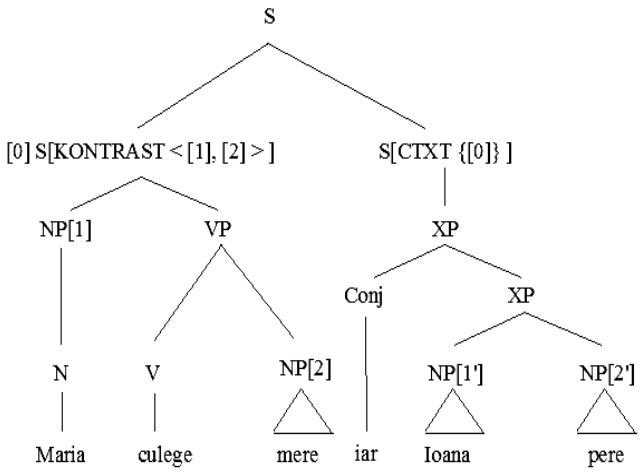
And the interpretation of the entire sentence:

(50) culege(Maria, mere) ∧ culege(Ioana, pere)

To sum up, this semantic process consists in: (i) determining the parallel elements in the source and target; (ii) solving an equation involving the meaning of the source and a relation over the parallel elements in the source; (iii) applying this relation to the parallel elements in the target (Dalrymple (2005)).

Further work is needed to integrate a full analysis in HPSG (Sag *et al.* (2003)). Basically, a fragment will be well-formed if its remnants can be substituted into the antecedent clause. We will need a syntactic constraint requiring that the remnants are legitimated by one of the predicative heads of the source, following a licit word order in the grammar. More, we will need a semantic constraint which allows us to recuperate via the KONTRAST feature all parallel elements, even those which are not explicitly realised in the source clause. The missing material is recovered for the interpretation of the fragment via the CONTEXT feature. A sample of this analysis can be observed in (51):

(51)



6. Conclusion

Taking Romanian as our object language in this paper, we have inventoried some of the main distributional properties of gapping construction. We then provided some evidence against analyses that appeal to a strict syntactic parallelism and to a purely syntactic reconstruction to account for gapping. We propose analyzing gapped clauses as fragments, whose interpretation is built by referring to the antecedent clause. It remains to be seen how a fragment-based analysis can be handled within a construction-based HPSG framework. Further work is needed to capture also discursive and prosodic constraints for gapping constructions. The final aim would be to extend our analysis to other "elliptical" constructions that could involve the notion of *fragment*, such as sluicing (52a), "split" conjuncts and particularly polar ellipsis (52b), end-attachment coordination of *wh*-words (52c), etc., in order to build a more general grammar of fragments.

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(52) a. Cineva m-a sunat, dar nu ştiu [cine].
Someone called me, but I don't know who
b. Va veni Ion, [şi şi Maria].
Ion will come, and Maria too
c. Când te-a sunat Ioana, [şi de ce]?
When Ioana called you, and why?

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