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Across-the-Board and Parasitic Gap Constructions in Romanian

Fumikazu Niinuma
Kochi Gakuen College

1 Introduction

Many authors have argued that parasitic gap (PG) constructions, illustrated in (1), are the same as across-the-board (ATB) constructions, illustrated in (2).[1]

(1) What did you file *e* without reading *e*?

(2) Which paper did John file *e* and Mary read *e*?

I would like to thank Željko Bošković, Hideki Maki, Jairo Nunes, and Shigeki Taguchi for their encouragement and comments on earlier versions of this squib, and Ileana Comorovski and Simona Herdan for their help with judgments. I also benefited greatly from the suggestions and comments of two anonymous *LI* reviewers. All errors remain my own.

[1] In (1) and (2), *e* merely indicates a gap (trace, unpronounced copy, or parasitic gap). See Nunes 2004 for arguments that the parasitic gap is in fact a copy of a moved element.

As pointed out by Ross (1967), PG constructions and ATB constructions are similar in that the dislocated element in (1) and (2) appears to be extracted from more than one position. Because of this similarity, many researchers have tried to assimilate the two constructions (see, e.g., Haïk 1985, Williams 1990, Nunes 2004, An 2007).

In this squib, I will investigate PG and ATB constructions in Romanian, a multiple *wh*-fronting language, and argue that PG constructions cannot be derived via ATB extraction. Thus, this squib provides additional evidence for Munn's (1993) and Postal's (1993) arguments against a uniform analysis. I will demonstrate my point with respect to Nunes's (2004) and An's (2007) analyses.

2 Across-the-Board Movement in Romanian

As extensively discussed by Rudin (1988), Comorovski (1996), and Bošković (2002), Romanian is a multiple *wh*-fronting (MWF) language. Also, this language is like Bulgarian and English in that it shows superiority effects.

(3) a. Cine ce a cumpărat?
who what has bought
'Who bought what?'
b. *Ce cine a cumpărat?

In Romanian, *wh*-fronting is obligatory even in echo questions (see Comorovski 1996, Bošković 2002).

(4) *Ion a adus ce?
Ion has brought what

As reported by Bošković (2002), MWF languages display a rather interesting phenomenon whereby one of the *wh*-phrases is pronounced in the base position. Like all questions in Romanian, (5a) is subject to multiple *wh*-fronting. However, the second *wh*-phrase cannot be fronted, as illustrated in (5b). Bošković argues that Romanian has a PF constraint against sequences of homophonous *wh*-phrases. Assuming that lower-copy pronunciation is allowed when it is necessary to avoid a PF violation (e.g., Bobaljik 1995, Franks 1998, Bošković 2001), a lower copy of the second *ce* is then pronounced in (5a).

(5) a. Ce precede ce?
what precedes what
'What precedes what?'
b. *Ce ce precede?

Let us now consider the ATB construction in Romanian. (6) illustrates ATB multiple *wh*-fronting.

(6) Cine ce a spart şi a distrus?
who what has broken and has destroyed
'Who has broken and destroyed what?'

However, when phonetically identical *wh*-phrases undergo ATB movement, one of the *wh*-phrases is pronounced in the base-generated position of the second conjunct, not the first conjunct.[2]

(7) a. *Ce ce a precedat și a influențat?
what what has preceded and has influenced
'What preceded and influenced what?'
b. Ce a precedat și a influențat ce?
what has preceded and has influenced what
c. *Ce a precedat ce și (a) influențat?
what has preceded what and has influenced

3 Parasitic Gap Constructions in Romanian

A compelling argument for the copy theory of movement comes from PG constructions in Romanian (Bošković 2002). The relevant example is shown in (8).

(8) Ce precede ce fără să influențeze?
what precedes what without SUBJ.PART influences
'What precedes what without influencing?'

As is well known, PGs must be licensed by a *wh*-element that undergoes movement overtly (see Chomsky 1982). If this is the case, then

[2] I am indebted to Ileana Comorovski and Simona Herdan for providing me the examples in (7). In the original version of the squib, the examples were as shown in (i)–(iii), taken from An 2007:222, 226.

(i) *Ce ce a spart și a distrus?
what what has broken and has destroyed
'What broke and destroyed what?'

(ii) Ce a spart și a distrus ce?
what has broken and has destroyed what

(iii) ??Ce a spart ce și a distrus?
what has broken what and has destroyed

One of the anonymous reviewers notes that (ii) is unacceptable, contrary to An's (2007) judgment. The reviewer points out that there are two interfering factors that make (ii) unacceptable: (a) the verbs *a sparge* 'to break' and *a distruge* 'to destroy' generally take animate subjects; consequently, the occurrence of inanimate *ce* 'what' as a subject makes parsing the sentence difficult; (b) in Romanian multiple questions, the leftmost *wh*-phrase must be discourse-linked. Replacing the verbs in (ii) with those in (7b) eliminates factor (a) and allows a discourse-linked interpretation of the leftmost occurrence of *ce*.

In addition, the anonymous reviewer provides example (iv), which avoids the interfering factors mentioned above:

(iv) Ce precede și influențează ce?
what precedes and influences what
'What precedes and influences what?'

However, (iv) does not provide evidence for ATB movement, since it could be analyzed as coordination of the V heads (cf. *John chopped and fried the same onion*). I thank one of the editors for pointing out the problem with (iv).

the acceptability of (8) clearly indicates that the *wh*-phrase in object position actually moves overtly and licenses the PG in the adjunct clause. However, as discussed earlier, because two homophonous elements must not be adjacent, the *wh*-object is pronounced in the base-generated position.

What is interesting in this connection is that the object *wh*-phrase must be phonetically realized in the matrix clause, not the adjunct clause.[3]

(9) *Ce precede fără să influenţeze ce?
what precedes without SUBJ.PART influences what

To sum up, the distribution of *wh*-phrases pronounced in base positions in Romanian ATB and PG constructions differs. In ATB constructions, the *wh*-phrase is pronounced in the second conjunct, while in PG constructions, the *wh*-phrase is pronounced in the main clause.

4 Nunes's (2004) Analysis

I will now examine how the data discussed in section 3 would be treated in Nunes's (2004) system. Under the sideward movement analysis proposed by Nunes, the parasitic gap is actually a copy of the moved *wh*-phrase. According to Nunes, the *wh*-phrase in the adjunct clause first undergoes sideward movement to object position in the main clause and then undergoes movement to Spec,CP in overt syntax. For example, consider (10).

(10) [which paper]$_1$ did you file [which paper]$_2$ without reading [which paper]$_3$

Assuming that movement into a θ-position is a licit operation (e.g., Bošković 1994, Lasnik 1995), [which paper] in the adjunct clause ''sideward-moves'' to object position in the matrix clause. Then, [which paper] in the matrix clause moves to Spec,CP and the two chains CH1 = (copy$_1$, copy$_2$) and CH2 = (copy$_1$, copy$_3$) are created. Finally, we need to determine which copy in the chains should be deleted, according to the operation Chain Reduction.

(11) *Chain Reduction*
Delete the minimal number of constituents of a nontrivial chain CH that suffices for CH to be mapped into a linear order in accordance with the Linear Correspondence Axiom (LCA). (Nunes 2004:27)

Chain Reduction dictates that the optimal reduction of CH1 and CH2 involves deleting their lower link, as shown in (12). Thus, the derived sentence (13) is expected to be grammatical, as desired.

[3] I thank Ileana Comorovski for the judgment on sentence (9).

(12) [Which paper]$_1$ did you file ~~[which paper]~~$_2$ without reading ~~[which paper]~~$_3$?

(13) Which paper did you file without reading?

Let us now see how Nunes's (2004) system can account for the Romanian data. At this point, two chains are created: CH1 = (ce_2, ce_3), CH2 = (ce_2, ce_4). The relevant structure of (8) would be as follows:[4]

(14) ce_S ce_2 precede ce_3 [fără să influențeze ce_4]

Since ce_2 cannot be phonetically realized because of the PF constraint noted above, we have to determine which other copy to pronounce. However, Nunes's system cannot determine which copy (ce_3 or ce_4) should be phonetically realized. The formal features of the copies are identical: (a) the Case feature of each copy is checked off, (b) each copy has a θ-feature, and (c) the *wh*-feature of each copy is checked off as well.[5]

The same problem arises when we try to use Nunes's (2004) analysis to account for the distribution of the *wh*-phrases in ATB constructions in Romanian. Since the formal features of the *wh*-objects in both conjuncts are all checked off, we need an additional mechanism to account for the pronunciation of the lower copy in (7b). Furthermore, it is not clear how this system can account for the difference between ATB and PG constructions with respect to which lower copy is pronounced.

5 An's (2007) Analysis of Across-the-Board Constructions

An (2007) provides a very interesting account for the phonetic realization of ATB constructions in MWF languages. An first assumes Fox

[4] I will ignore the chain of the subject *wh*-phrase ce_S, since nothing seems to be problematic with respect to this chain.

[5] It is not immediately clear where the second instance of *ce* in (8) is realized. As pointed out by one of the editors, because the verb *precede* has moved out of the VP, we can say that the direct object *ce* is located at the edge of the VP. There are two scenarios to consider. First, if the second instance of *ce* at the VP edge c-commands the *wh*-phrase in the adjunct clause, the PG should be allowed even when the direct object is not a *wh*-phrase. However, it is not allowed.

(i) *Cine a citit cartea fără să claseze?
who has read the.book without SUBJ.PART files
'Who read the book without filing?'
(Bošković 2002:375)

Second, if the second instance of *ce* at the VP edge does not c-command the *wh*-phrase in the adjunct clause, the question immediately arises which copy of *ce* should be phonetically realized. Unfortunately, Nunes's (2004) system cannot determine this, because *ce* at the VP edge and *ce* in the adjunct clause have the same formal features. Thus, this analysis does not affect the main point, although it is quite interesting to pursue further.

and Pesetsky's (2005) system of cyclic linearization. Fox and Pesetsky argue that Spell-Out determines the linear order of elements contained in the phase that is sent to PF. The crucial point of their system is that the linear order determined by Spell-Out of a phase cannot be contradicted by the linear order determined by the Spell-Out of the next phase.

An (2007) also assumes that conjuncts undergo derivation in different workspaces until they are conjoined and that each conjunct undergoes Spell-Out in the course of its derivation. In other words, the linear order within one conjunct is determined independently of the linear order of other conjuncts. An also assumes an evaluation procedure *Scan*, which checks whether conjuncts violate any conditions on coordination structures, such as the condition regarding deletion under identity.

With these assumptions in mind, let us consider how An's (2007) account explains the linear order of the ATB construction in (6).

(15) a. First conjunct: cine $>$ ce $>$ a spart
b. Second conjunct: cine $>$ ce $>$ a distrus
c. Conjunction, Scan, Target Selection: {*cine ce*}

Note that since the elements that undergo ellipsis (deletion) are identical in both conjuncts (i.e., {*cine ce*}), we need to determine which occurrence of each element is to be deleted. The only way to follow the principle of order preservation and preserve the ordering relations in both conjuncts is to phonetically realize the elements in the first conjunct. Thus, the elements {*cine ce*} in the second conjunct undergo deletion, and sentence (6) is derived as shown in (16).

(16) [*Cine ce* a spart] şi [~~cine ce~~ a distrus]?

Turning to the contrast in (7), let us consider the structures of the two conjuncts:

(17) a. First conjunct: $ce_S > ce_O >$ a precedat
b. Second conjunct: $ce_S > ce_O >$ a influenţat

In this situation, the fronted *wh*-phrases are homophonous, and as a result, the lower copy in each conjunct is phonetically realized, as shown in (18).

(18) a. First conjunct: $ce_S >$ a precedat $> ce_O$
b. Second conjunct: $ce_S >$ a influenţat $> ce_O$

Then the operation Scan determines which element in (18) will undergo deletion. There are two occurrences of ce_S and two occurrences of ce_O. As for ce_S, the only way to satisfy the linear order of both conjuncts is to phonetically realize the element in the first conjunct; otherwise, a contradiction arises with respect to the underlying position within the first conjunct ($ce_S >$ *a precedat*). With ce_O, which bears accusative Case, the opposite holds: the element in the second conjunct has to be phonetically realized in order to preserve the linear order of

both conjuncts. If ce_O in the first conjunct were phonetically realized, then the surface position of ce_O would lead to a contradiction regarding their underlying position within the second conjunct (*a influenţat* > ce_O). Thus, (7b) is derived by deleting ce_S in the second conjunct and ce_O in the first conjunct.

(19) [Ce_S a precedat ~~ce~~$_O$] şi [~~ce~~$_S$ a influenţat ce_O]?

Now consider how the PG construction in (8) is derived under An's (2007) system, which assumes a uniform account of PG and ATB constructions. With the coordinate structure, the adjunct clause and the main clause should undergo derivation in separate workspaces (see also Nunes 2004). The relevant structures of the main and adjunct clauses are as follows:

(20) a. Main clause: ce_S > ce_O > precede
b. Adjunct clause: ce_O > fără > să > influenţeze

However, these structures cannot be maintained as they are, because of the PF ban on sequences of homophonous *wh*-phrases. As a result of this constraint, the *wh*-object must be pronounced in the base position, as shown in (21).

(21) a. Main clause: ce_S > precede > ce_O
b. Adjunct clause: fără > să > influenţeze > ce_O

Now Scan determines which shared element (ce_O) of the two clauses will be deleted. If ce_O in the adjunct clause is deleted, the linear order of the two clauses is contradicted (ce_O > *influenţeze*). If ce_O in the first conjunct is deleted, the contradiction problem does not emerge. We then incorrectly derive (9) instead of (8). Therefore, An's (2007) analysis of the ATB construction in MWF languages does not extend to the PG construction in Romanian, one of the MWF languages.

6 Concluding Remarks

I have pointed out the exceptional behavior of the *wh*-phrase that is pronounced in a lower position due to a phonological constraint in Romanian. I have also noted that the distribution of the *wh*-phrase in PG constructions differs from that in ATB constructions. My proposal regarding PG constructions and ATB constructions reveals that PG constructions cannot be derived from ATB movement and that some other mechanisms must be involved in these constructions. By examining the construction involving pronunciation of a lower copy of a *wh*-phrase in Romanian, an MWF language, I have argued that ATB constructions and PG constructions should not be assimilated, since they do not behave alike in the relevant respect. One possible explanation for the different behaviors of the two constructions may be that a PG is not a trace created by movement, as discussed by Haïk (1985), Cinque (1990), Frampton (1990), Lasnik and Stowell (1991), and oth-

ers.[6] For instance, Haïk (1985) claims that PGs are empty pronominals before Spell-Out but they become ATB-variables at LF, which are bound by the dislocated element in overt syntax. If so, we can account for the fact that the gap in the adjunct cannot be phonetically realized in the PG constructions in Romanian because PGs are by nature phonetically null. However, it seems that Haïk's theory is incompatible with current minimalist guidelines. In particular, the claim that a PG is a special kind of empty pronominal that is able to change into a variable at LF violates the Inclusiveness Condition, since the variable (or the operator-variable chain) is added to the structure at LF. I will leave discussion of this possibility for future research.

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[6] I am grateful to an anonymous reviewer for bringing Haïk's (1985) analysis to my attention. The following discussion owes much to this reviewer's insightful comments.

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Nonmyopic Harmony and the Nature of Derivations

Rachel Walker
University of Southern California

Unbounded harmony caused by feature spreading is typically myopic (Wilson 2003, 2006). This means that whether spreading proceeds to a neighboring element is not sensitive to whether a segment beyond the neighboring element can undergo harmony. To illustrate, suppose that a language has a regressive harmony for some feature and a sequence of segments [. . . α β γ . . .]. Whether spreading proceeds from γ to β is not sensitive to whether spreading can continue on to α. In other words, the operation of myopic harmony is determined by local factors, not global ones. Although myopia follows from the iterative application of an assimilation rule that spreads a feature to a single adjacent target, studies by Wilson (2003, 2006) and McCarthy (2003, 2004, 2009) have demonstrated that it presents difficulty for the classic framework of Optimality Theory (OT) (Prince and Smolensky 2004) under conventional assumptions about featural representations and the harmony-driving constraints.

This work focuses on a complementary issue. The first point to be established is that nonmyopic bounded harmony exists: patterns where adjacent segments undergo assimilation only when a nonlocal viable target is present for a bounded harmony process. The theoretical argument to be made about these systems is that while they are straightforwardly handled within classic OT, they pose a problem for a proposal to restrict the magnitude of change that can occur in a single step of a derivation, as in certain serialist approaches in OT, such as OT with candidate chains (OT-CC) (McCarthy 2007).

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