On Category Restrictions in Across-the-Board and Parasitic Domains:
Evidence from Russian*

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Abstract

This paper is concerned with the nature of category restrictions in across-the-board and parasitic gaps. Postal (1993) observes that parasitic gaps in English exhibit category restrictions but across-the-board gaps do not show such restrictions. Munn (2001) indicates that independent differences in the across-the-board and parasitic domains can account for category restrictions in parasitic gaps: whereas parasitic gap domains constitute selective islands, across-the-board domains do not. Based on a new set of data from Russian contrastive coordination, the paper provides strong evidence in support of the argument that category restrictions should be attributed to the inherent properties of a certain domain, which in this case is the across-the-board domain of contrastive coordination.

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1 Introduction

This paper is concerned with the nature of category restrictions in across-the-board and parasitic gaps. Across-the-board gaps originate in coordinate structures from movement of the same constituent out of each conjunct, as illustrated schematically in (1).

(1) Wh$_i$ $[XP \ldots ti \ldots]$ and $[XP \ldots ei \ldots]$

A parasitic gap is formed when the same constituent becomes an antecedent of more than one gap and the subsequent gap depends on the first gap, as shown in (2).

(2) Wh$_i$ $[XP \ldots ti \ldots [XP \ldots ei \ldots]]$

In English, parasitic gaps show restrictions to certain kinds of syntactic categories (Cinque 1990; Postal 1993). On the other hand, across-the-board gaps do not show such restrictions (Postal 1993). Consider, as an example, the contrast between the across-the-board and parasitic gap structures in (3).

(3) a. [How sick]$_i$ did John look $ti$ and (Betty) say he actually felt $ei$?

b. *[How sick]$_i$ did John look $ti$ without actually feeling $ei$?

(Postal 1993, 736)

In (3a), it is possible to move the how-phrase out of each conjunct and the sentence can have the interpretation that ‘John looked very sick and Betty said he actually felt very sick’. However, in (3b), it is not possible to extract the how-phrase out of the parasitic gap site. The sentence cannot be interpreted as ‘John looked very sick without actually feeling very sick’. The contrast in (3) suggests that parasitic gaps are more restricted than across-the-board gaps.

Based on the contrast between the across-the-board and parasitic gap structures, such as (3), Postal (1993) has argued that parasitic gaps and across-the-board gaps represent distinct phenomena and require different analyses.
Munn (2001) argues that independent differences in the across-the-board and parasitic gap structures can account for category restrictions in parasitic gaps. He shows that parasitic gap structures involve an operator which can block some extractions and induce weak island effects. No such intervening operator is present in the across-the-board gap structures. Under this analysis, a unified treatment of both constructions can be preserved.

In the paper I argue for the dependency of category restrictions on properties of the extraction site. The contrastive coordination in Russian provides strong evidence in support of the claim. Across-the-board gaps of the contrastive coordination exhibit category restrictions just like parasitic gaps do. I argue that category restrictions are due to properties inherent to the contrastive coordination. The Russian data further support a unified analysis of the across-the-board and parasitic gap structures.

The argument proceeds as follows. I consider two coordinate constructions in Russian which occur with two different conjunctions. The contrastive coordination which occurs with the *a* conjunction and the non-contrastive coordination which uses the *i* conjunction. Consider, as an example, the structures in (4a) and (4b).

(4)  
   a. Scenario: What did Dima and Olja buy?
      Dima kupil knigu, a Olja kupila ˇgurnal.
      ‘Dima bought a book and/but Olja bought a magazine.

   b. Scenario: What are the two events that happened at the book store?
      Dima kupil knigu i Olja kupila ˇgurnal.
      ‘Dima bought a book and Olja bought a magazine.’

Interestingly, across-the-board gaps of the contrastive coordination (5a) but not of the non-contrastive coordination (5b) in Russian show the same kind of category restrictions that parasitic gaps do. Consider the contrast between the across-the-board and parasitic gap structures in (5).
In both constructions in (5a) and (5c), movement of the how-phrase is blocked and the interpretation that ‘Dima looked very sick and felt very sick’ is barred. The fact does not hold for (5b), however.

In the paper, I argue that blocking of the movement of the how-phrase, such as (5a), is due to properties inherent to the contrastive coordination. The semantics of the contrastive coordination requires each conjunct to represent the topic-focus structure which, in its turn, induces weak island effects, as defined in Szabolcsi and Zwarts (1997). Consider first sentences in (6).

(6) Scenario: What did Dima and Olja do to the books?

a. Dima<sub>Topic</sub> knigi kupil<sub>Focus</sub>, a Olja<sub>Topic</sub> (knigi/ih) prodala<sub>Focus</sub>.  
Dima books bought A Olja books/them sold  
‘Dima bought the books and/but Olja sold them.’

b. *Dima<sub>Topic</sub> knigi kupil<sub>Focus</sub>, a Olja prodala knigi.  
Dima books bought A Olja sold books  
‘*Dima bought the books and/but Olja sold books.’
c. *Dima kupil knigi, a Olja\textsubscript{Topic} knigi prodala\textsubscript{Focus}.
   Dima bought books A Olja books sold
   ‘*Dima bought books and/but Olja sold the books.’

In (6a), each conjunct represents a topic-focus structure, as indicated by the subscripts
$XP_{Topic}$ and $XP_{Focus}$, and forms a felicitous sentence in the given context. In (6b) and
(6c), only one of the conjuncts constitutes the topic-focus structure and the sentences are
ungrammatical. The set of sentences in (6) suggests that in the contrastive coordination
each conjunct has to represent the topic-focus structure.

The topic-focus structure induces weak island effects:

(7) a. Scenario: Olja broke the car and/but Dima fixed it.
   Čto Dima\textsubscript{Topic} počinil\textsubscript{Focus}?
   what Dima-nom fixed
   ‘What did Dima fix?’

b. Scenario: Dima fixed the car.
   Čto Dima počinil?
   what Dima-nom fixed
   ‘What did Dima fix?’

c. Scenario: Olja broke the car and/but Dima fixed it quickly.
   *Kak Dima\textsubscript{Topic} mašinu počinil\textsubscript{Focus}?
   how Dima-nom car fixed
   ‘How did Dima fix the car?’

d. Scenario: Dima fixed the car quickly.
   Kak Dima počinil mašinu?
   how Dima-nom fix car
   ‘How did Dima fix the car?’

The sentences in (7a) and (7b), on the one hand, and in (7c) and (7d), on the other
hand, form minimal pairs differing only in the topic-focus marking. Both structures in (7a)
and (7b) allow extraction of the *what*-phrase. In (7c), however, movement of the *how*-phrase
is blocked and the interpretation that ‘Dima fixed the car quickly’ is barred. The contrast between (7a) and (7c) indicates that the topic-focus structure permits some but not all wh-phrases to extract. This fact suggests that the topic-focus structure creates weak island environments.

The Russian data indicate that across-the-board gaps of the contrastive coordination but not of the non-contrastive coordination are more restricted. Restrictions emerge because of the properties inherent to the contrastive coordination. Each of the conjuncts of the contrastive coordination has to constitute the topic-focus structure which induces weak island effects. The non-contrastive coordination does not possess such properties and does not show category restrictions.

The Russian facts support the claim that category restrictions depend on properties of the extraction site. They further support a unified analysis of the across-the-board and parasitic gap structures.

The paper is organized as follows. Section 2 reviews properties of across-the-board and parasitic gaps with respect to islandhood and crossover effects. Section 3 discusses category restrictions in across-the-board and parasitic gaps. Section 4 provides an account for restrictions in the across-the-board domain of the contrastive coordination. Section 5 concludes the paper.
2 On Properties of Across-the-Board and Parasitic Gaps

It has been noted by various researchers (Huybregts and van Riemsdijk 1985; Haïk 1985; Williams 1990; Munn 1993) that across-the-board and parasitic gaps share some properties, such as sensitivity to strong islands and strong crossover, suggesting that both types of gaps can be treated alike. Two kinds of analyses have been undertaken to tackle the issue. The first kind of analysis assumes parasitic gap structures to be some sort of a coordination and argues for the reduction of parasitic gaps to across-the-board gaps (Williams 1990). Under this analysis, parasitic gaps are considered as “real” gaps, and both types of gaps are given an equal status. Reduction of parasitic gaps to across-the-board gaps, however, has shown that this kind of analysis does not make correct predictions about properties of the gaps (Postal 1993; Munn 2001). One main objection comes from asymmetric behavior of real and parasitic gaps with respect to weak crossover and resumptive pronouns. I address the asymmetry issue in sections 2.2 and 2.3 of the paper.

The second kind of analysis tries to reduce across-the-board gaps to parasitic gaps (Pesetsky 1982; Franks 1993; Munn 1993), suggesting that we can dispense with such phenomena as across-the-board extractions entirely. This latter approach assumes a null operator analysis of parasitic gap structures (Chomsky 1986; Cinque 1990; Lasnik and Stowell 1991) and extends it to across-the-board gap constructions (Munn 1993). According to the null operator analysis, non-initial across-the-board gaps and parasitic gaps involve null operator movement to the edge of their corresponding domains as shown in (8) (irrelevant details omitted).

(8) a. $\left[CP \ Kogo_i [IP \ Dima \ vnes \ v \ spisok \ gap_i] \ [BP \ Op_i [B^i \ i/a \ gap_i]] \right]$ $\left[IP \ Lena \ priglasila \ who \ Dima \ put \ on \ list \ and/A \ Lena \ invited \ gap_i] \right]$

‘Who did Dima put on the list and Lena invite?’

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1Henceforth, a real gap is a gap that is formed when a non-parasitic type of extraction occurs.
In this section, I show that both across-the-board gaps and parasitic gaps in Russian exhibit strong island effects and obey strong crossover. This fact supports the idea that both types of structures can be treated alike. On the other hand, only initial gaps of across-the-board constructions and non-parasitic gaps in parasitic gap sentences indicate sensitivity to weak crossover and resumptive pronouns. This latter fact reveals that there is an asymmetry between the gaps. Given the empirical evidence in Russian, I am going to adopt the null operator analysis of across-the-board and parasitic gap constructions favoring the across-the-board to parasitic gaps reduction approach.

### 2.1 Strong Island Effects

Across-the-board and parasitic gaps exhibit movement-like behavior indicating that both types of gaps may be treated in the same way (Kayne, 1983; Chomsky, 1986). This section introduces data from Russian drawing on some original facts from English in support of the claim.

Both across-the-board gaps and parasitic gaps exhibit movement-like behavior yielding subjacency effects (Kayne, 1983; Chomsky, 1986; Cinque, 1990). Movement out of the parasitic domain and across-the-board movement are blocked if non-initial conjunct or parasitic site is an island (enclosed in brackets): wh-island (9a) and (10a) or adjunct-island (9b) and (10b).

(9) Across-the-board gaps

a. *(Which man did John interview \(t_i\) and wonder who to ask [which job to give to \(e_i\)]?*
b. *Which man did John interview and meet the man in the office [near $e_i$]?  

(10) Parasitic gaps  

a. *Which man did John interview without expecting us to ask [which job to give to $e_i$]?

b. *Which man did John interview without meeting the man in the office [near $e_i$]?

Strong island effects in non-initial across-the-board gaps and parasitic gaps are comparable with single gap violations as shown in (11).

(11) a. *Which man did John wonder who to ask [which job to give to $e_i$]?

b. *Which man did John meet the man in the office [near $e_i$]?

Across-the-board gaps of non-initial conjuncts and parasitic gaps in Russian show strong island effects too. Consider the following sentences involving a wh-island and an adjunct-island in across-the-board gaps (12) and parasitic gaps (13), respectively.

(12) Across-the-Board gaps  

a. *Kakomu sotrudniku, Dima utrom pozvonil i/a večerom which worker Dima-m.s. in-the-morning called and/A in-the-evening zadumalsja o tom, kakuju rabotu predložit $e_i$? thought about that which job gives

‘*Which worker did Dima call in the morning and wonder which job to give to in the evening?’

b. *Kakogo sotrudnika, Lena utrom otrugala i/a večerom which worker-m.s. Lena-f.s. in-the-morning criticized and/A in-the-evening priglasila v kino sotrudnitsu iz sosednego $e_i$ kabineta? invited to movie worker-f.s. in neighbor with office

‘*Which worker did Lena criticize in the morning and invite to the movie a worker in the office near in the evening?’
(13) Parasitic gaps

a. *Kakomu sotrudniku Dima pozvonil t posle togo, kak podumal o which worker Dima-m.s. called after thought about tom, kakuju rabotu e predložit? that which job give

"Which worker did Dima call after wondering which job to give to?"

b. *Kakogo sotrudnika Lena otrugala t posle togo, kak vstretila klientku which worker Lena-f.s. criticized after met client-f.s. v sosednem s e kabinete?

"Which worker did Lena criticize after meeting the client in the office near?"

As in English, across-the-board gaps of non-initial conjuncts and parasitic gaps in Russian demonstrate strong island effects producing the same degree of unacceptability as single gaps.

(14) a. *Kakomu sotrudniku Dima zadumalsja o tom, kakuju rabotu which worker Dima-m.s. thought about that which job predložit e?
gives

"Which worker did Dima wonder which job to give to?"

b. *Kakogo sotrudnika Lena priglasila v kino sotrudnitsu iz sosednego which worker-m.s. Lena-f.s. invited to movie worker-f.s. in neighbor s e kabineta?

"Which worker did Lena invite to the movie a worker in the office near?"

The Russian data in this section support the argument that across-the-board and parasitic gaps can be treated in the same way. However, strong islands do not make any predictions about differences between real and parasitic gaps.

2.2 Crossover Effects

Strong islands do not provide criteria for distinguishing properties of the gaps. Crossover facts, on the other hand, do. In this section, I show that real gaps differ from parasitic gaps
and that initial and subsequent gaps in across-the-board constructions indicate the same sort of asymmetry.

2.2.1 Strong Crossover

Non-initial across-the-board and parasitic gaps show strong crossover effects (Williams 1990; Munn 2001) both in English and Russian.

(15) English

a. *Which man did we talk to after he saw e?

b. *Which man did we talk to and he never visit e?

(16) Russian

a. *Kakogo soseda my priglasili v gosti posle togo, kak on uvidel e?

'Which neighbor did we invite over after he saw?'

b. *Kakogo soseda my priglasili v gosti t i/a on ni razu ne navestil e?

'Which neighbor did we invite over and he never visit?'

Strong crossover shows that non-initial gaps in across-the-board construction and parasitic gaps behave like a *wh*-trace.

2.2.2 Weak crossover

It has been noted that real and parasitic gaps show an asymmetric behavior with respect to weak crossover (Lasnik and Stowell 1991; Munn 2001), as shown in (17). Whereas real gaps induce weak crossover, parasitic gaps do not. The contrast suggests that real and parasitic gaps cannot be given an equal status.

(17) a. Which man did you visit just before his boss fired e?
b. *Who did his mother gossip about despite you(r) having vouched for $e_i$?

The fact holds for Russian real and parasitic gaps, as (18) indicates.

(18) a. Kakogo sotrudnika ty pohvalil ti prere gle, cem ego na cal’nik uvolil ei?
    which worker you praised before his boss fired
    ‘Which worker did you praise before his boss fired?’

b. *Kogo ego na cal’nik uvolil ti prere gle, cem ty pohvalil ei?
    who his boss fired before you praised
    ‘*Who did his boss fire before you praised?’

The contrast observed between real and parasitic gaps shows up in across-the-board constructions. Whereas initial gaps behave just like real gaps with respect to weak crossover, non-initial gaps do not show weak crossover effects.

(19) English

a. Which man did you hire and his boss fire $e_i$?

b. *Which man did his boss fire and you hire $e_i$?

(20) Russian

a. Kakomu mal’ciku ty podaril ti CD i/a ego roditeli podarili $e_i$ knigu?
    which boy you presented CD and/A his parents presented book
    ‘Which boy did you present a CD and his parents present a book?’

b. *Kakomu mal’ciku ego roditeli podarili ti knigu i/a ty podaril $e_i$
    which boy his parents presented book and/A you presented
    CD
    CD
    ‘*Which boy did his parents present a book and you present a CD?’

The Russian data show that real gaps and parasitic gaps behave differently with respect to weak crossover. The same kind of asymmetry arises between initial and non-initial gaps in across-the-board constructions.
2.3 Resumptive Pronouns

Another piece of evidence for asymmetry between real and parasitic gaps comes from resumptive pronouns. Munn (2001), citing Sells (1984), shows that in Hebrew, across-the-board constructions show a first conjunct asymmetry.

(21) a. ha hiš še Rina roca ve hohevet hoto yoter mikulam the man that Rina wants and loves him more-than anyone ‘the man that Rina wants and loves more than anyone’

b. *ha hiš še Rina roca hoto ve hohevet yoter mikulam the man that Rina wants him and loves more-than anyone ‘the man that Rina wants and loves more than anyone’

The descriptive generalization states that if a second conjunct contains a gap, then the first conjunct must not contain a resumptive pronoun. If the first conjunct contains a gap, the second conjunct may be either a gap or a resumptive pronoun. The same facts hold in parasitic gap constructions, as shown in (22).

(22) a. ha mhamar še karati lifnei še tiyakti hoto the article that read-I before that filed-I it ‘the article that I read before I filed it’

b. *ha mhamar še karati hoto lifnei še tiyakti the article that read-I it before that filed-I ‘the article that I read it before I filed’

The Russian across-the-board constructions appear to confirm the first conjunct asymmetry, as shown in (23). The first conjunct in (23a) contains a gap, therefore, a resumptive pronoun is allowed in the second conjunct. The resumptive pronoun in the second conjunct can be omitted in (23a). In (23b), on the other hand, the second conjunct contains a gap, therefore, it is not allowed to have a resumptive pronoun in the first conjunct. As a result, (23b) is ungrammatical.
(23) a. Vot eta stat'ja, kotoruju ja pročital i/a zatem vybrosil (ee) za here this article which I read and/A then through-away it as nenadobnost'ju.
not-wanted

*Here is the article that I read and then through it away as not wanted.'

b. *Vot eta stat'ja, kotoruju ja pročital ee i/a zatem vybrosil za here this article which I read it and/A then through-away as nenadobnost'ju.
not-wanted

*Here is the article that I read it and then through away as not wanted.'

Parasitic gaps in Russian show the same kind of asymmetry.

(24) a. Vot eta stat'ja, kotoruju ja pročital preģde čem ja vybrosil (ee) za here this article which I read before I through-away it as nenadobnost'ju.
not-wanted

*Here is the article that I read before I through it away as not wanted.'

b. *Vot eta stat'ja, kotoruju ja pročital ee preģde čem ja vybrosil za here this article which I read it before I through-away as nenadobnost'ju.
not-wanted

*Here is the article that I read it before I through away as not wanted.'

The resumptive pronoun data in Russian indicate that across-the-board and parasitic gaps behave alike and, therefore, can be viewed as closely related constructions. I assume that across-the-board and parasitic gap structures involve movement of a null operator to the edge of their corresponding domains, and that this movement is constrained by strong crossover and strong islands. The resumptive pronoun distribution facts further support the claim about the asymmetry between the gaps favoring the across-the-board to parasitic gaps reduction analysis.

To summarize, in this section I have shown that across-the-board and parasitic gaps in Russian can be treated alike. Both types of constructions show asymmetries with respect
to the gaps suggesting that the null operator analysis should be adopted as a more natural way to capture the empirical facts.

3 Restrictions on Across-the-Board and Parasitic Gaps

3.1 Semantic Type Restrictions

Parasitic gaps in English are only allowed where definite pronouns are allowed (Cinque, 1990; Postal, 1993, 1998; Munn, 2001). The crossover data in section 2 have shown that parasitic gaps involve movement of a null resumptive pronoun. This fact indicates that parasitic gaps are necessarily restricted to positions where definite pronouns are allowed. Restrictions on parasitic gaps can, furthermore, be stated in terms of semantic type (Munn, 2001):

(25) a. A null resumptive pronoun denotes an element of type \(<e>\).

b. The semantic element represented by a parasitic gap must be a variable of type \(<e>\).

Across-the-board gaps in English do not show such restrictions (Postal, 1993; Munn, 2001). Interestingly, across-the-board gaps of the contrastive coordination in Russian do not allow the freedom of the English across-the-board gaps. As the data from the amount and functional readings below suggest, across-the-board gaps of the contrastive coordination in Russian are subject to the restrictions in (25).

3.1.1 Amount Readings

Amount relatives (Carlson, 1977; Heim, 1987; Grosu and Landman, 1998) do not form parasitic gaps (Munn, 2001). Consider a pair of sentences below:

(26) a. It was amazing the wine Bill drank gap after Fred spilled parasitic gap on the floor.
b. It was amazing the wine we drank gap that night.

The parasitic gap structure in (26a) does not have the amount interpretation. It has only the reading in which ‘the wine Bill drank is that which was spilled’. The non-parasitic gap structure in (26b), on the other hand, allows the amount reading.

The standard analysis of amount relatives involves quantification over degrees, which are not individual denoting. If it is correct that parasitic gaps denote an individual, the fact that parasitic gap structures, such as (26a), do not allow amount readings is borne out.

Across-the-board gaps in English do not show the amount reading restriction:

(27) It would take us weeks to drink the wine that John drank and Bill spilled.

(Munn 2001, 384)

The sentence in (27) allows the interpretation in which ‘for the amount of wine that John drank and Bill spilled it will take us weeks to drink that amount of wine’.

The contrast between parasitic gaps and across-the-board gaps with respect to the amount reading suggests that across-the-board gaps may range over any semantic type.

Parasitic gaps in Russian show the amount restriction, as illustrated in (28).


parasitic gap

‘It was amazing the wine Dima drank after Artem spilled on floor.

b. Bylo izumitel’nym vino, kotoroe my pili gap tem večerom.

‘It was amazing the wine we drank that night.

The parasitic gap structure in (28a) does not render the amount interpretation as opposed to the non-parasitic gap structure in (28b).

Interestingly, across-the-board gaps in Russian show a split regarding the amount interpretation. Whereas across-the-board gaps of the non-contrastive coordination allow the amount reading, across-the-board gaps of the contrastive coordination don’t:
Across-the-board gaps of the non-contrastive coordination in (29b) have the amount interpretation in which ‘for the amount of wine that Artem spilled and Dima drank, it would take us weeks to drink that amount of wine’. No such reading is possible in (29a).

The Russian data above show that only across-the-board gaps of the non-contrastive coordination may range over any semantic type. Across-the-board gaps of the contrastive coordination are restricted to variables of type <e>, just like parasitic gaps are restricted to individual denoting elements.

3.1.2 Functional Readings

Parasitic gaps do not allow functional readings [Munn, 2001]:

(30) Which poem did every poet throw out gap before her agent read parasitic gap?

a. Every poet threw out her first poem before her agent could read it.

b. *Every poet threw out her first poem before her agent read his first poem.

The parasitic gap structure in (30) has the interpretation in (30a). It cannot, however, be interpreted as in (30b) which is the sloppy identity reading of the parasitic gap. Under Chierchia’s analysis of functional readings [Chierchia, 1993], the sloppy identity reading obtains form the functional interpretation of a gap. A gap is a function which represents a higher order variable that is bound by a c-commanding element. According to this analysis,
the impossible sloppy identity interpretation of the parasitic gap in (30b) would arise from the LF in (31).

(31) LF: $[CP \text{ which poem}_i \text{ did } IP \text{ every poet}_j \text{ [IP throw out gap}_i^j \text{ [before her agent}_k \text{ read parasitic gap}_i^k]]]$]

If parasitic gaps denote individuals, they cannot be functions and, therefore, they cannot license the sloppy identity reading.

Across-the-board gaps in English allow functional readings (Munn, 2001):

(32) Scenario: Bill and Fred are both restaurant critics, and each has a respective list of restaurants to review.

a. Which restaurant did Bill review on Tuesday and Fred review on Wednesday?

b. $[CP \text{ which restaurant}_i \text{ did Bill}_x \text{ review } t^x_i \text{ on Tuesday and Fred}_y \text{ review } t^y_i \text{ on Wednesday?}$

In the given context, the question in (32a) can be answered with ‘Bill$_x$ reviewed his$_x$ first restaurant and Fred$_y$ reviewed his$_y$ second restaurant’, which is the sloppy identity reading of the question. This reading arises from the LF in (32b).

The fact that across-the-board gaps allow functional readings with sloppy identity shows that across-the-board gaps are not restricted to variables of type $<e>$.

Parasitic gaps in Russian do not allow functional readings:

(33) Kakoj restoran Artem proveril vo vtornik gap, posle togo, kak Dima proveril which restaurant Artem inspected on Tuesday after Dima inspected parasitic gap v ponedelnik?

‘Which restaurant did Artem inspect on Tuesday after Dima inspected on Monday?’

a. Artem$_i$ inspected his$_i$ most successful restaurant on Tuesday after Dima inspected it on Monday.

b. *Artem$_i$ inspected his$_i$ most successful restaurant on Tuesday after Dima$_y$ inspected his$_y$ most successful restaurant on Monday.
Parasitic gaps in Russian do not license the sloppy identity reading, as the starred interpretation of (33) in (33b) indicates. They are, thus, subject to the semantic type constraint in (25), which says that the semantic element represented by a parasitic gap must be a variable of type $<e>$. 

Across-the-board gaps of the non-contrastive coordination in Russian license functional readings with sloppy identity, whereas across-the-board gaps of the contrastive coordination don’t:

(34) a. Kakoj restoran Artem proinspektiroval vo vtornik i Dima proinspektiroval v sredu? ‘Which restaurant did Artem inspect on Tuesday and Dima inspected on Wednesday?’

   i. Artem$_x$ reviewed his$_x$ first restaurant and Dima$_y$ reviewed his$_y$ second restaurant.

b. Kakoj restoran Artem proinspektiroval vo vtornik, a Dima proinspektiroval v sredu? ‘Which restaurant did Artem inspect on Tuesday and Dima inspected on Wednesday?’

   i. *Artem$_x$ reviewed his$_x$ first restaurant and Dima$_y$ reviewed his$_y$ second restaurant.

The question in (34a) allows the sloppy identity interpretation, such as (34a-i). No such interpretation is available in (34b).

The functional reading data above show that across-the-board gaps of the contrastive coordination are restricted to individual denoting elements, whereas across-the-board gaps of the non-contrastive coordination are not.
3.2 Resumptive Pronoun Strategy

The lack of weak crossover effects (section 2) and category restrictions (section 3) in parasitic gaps show that the extraction in parasitic gaps in English resorts to the resumptive pronoun strategy. Parasitic gaps must use the resumptive pronoun strategy. Across-the-board gaps, on the other hand, use the resumptive pronoun strategy optionally (Munn, 2001).

Parasitic gaps and across-the-board gaps of the contrastive coordination in Russian indicate both the lack of weak crossover effects and category restrictions. They, therefore, must use the resumptive pronoun strategy. The question that arises is why the use of the resumptive strategy in across-the-board gaps of the contrastive coordination is obligatory. I address this question in the next section.

4 Explaining Restrictions in Contrastive Coordination

In this section, I first address the question why parasitic gaps must resort to the resumptive pronoun strategy. I then argue that the same reasoning accounts for across-the-board gaps of the contrastive coordination in Russian.

4.1 Relativized Minimality and Parasitic Gaps

Adverbial adjunct parasitic gap structures in English, such as (35), constitute selective islands (Munn, 2001).

(35) a. Which paper did you read before filing?
   b. Which paper did you read after filing?

Temporal adjuncts, such as before and after, involve movement of a null temporal operator (Larson, 1990) creating a context for selective islands:

(36) \[ PP \; Op_{pg} \; \text{before} \; [CP \; Op_{temp} \; [IP \; \ldots \; t_{pg} \; \ldots \; t_{temp}]]) \]
Within the Relativized Minimality approach, only referential arguments can escape weak islands. When adjuncts and non-referential arguments are extracted over other A-bar elements they result in relativized minimality effects (Rizzi 1996). Consider the following pairs of sentences:

\[\begin{align*}
(37a) & \text{ What do you know how to fix?} \\
(37b) & \text{ *How do you know what to fix?} \\
(37c) & \text{ What didn’t you fix?} \\
(37d) & \text{ *How didn’t you fix the car?} \\
(37e) & \text{ What did John frequently say that Bill bought?} \\
(37f) & \text{ *Why did John frequently say that Bill bought books?}
\end{align*}\]

(37a) and (37b) show that referential arguments can extract over wh-islands, whereas adjuncts cannot. (37c), (37d) and (37e), (37f) show that negation and intervening adverbials can block extraction of adjuncts but not of referential arguments.

The referentiality can be restated in terms of semantic type (Szabolcsi and Zwarts 1997). The non-referential elements, such as measure phrases, adverbials, predicates, are of semantically higher type than individuals. Under this view, selective islands are a scope phenomenon:

\[\begin{align*}
(38) & \text{ “Each scopal element is associated with certain operations. For a wh-phrase to take wide scope over some scopal element means that the operations associated with scopal element need to be performed in wh’s denotation domain. If the wh-phrase denotes in a domain for which the requisite operation is not defined, it cannot scope over scopal element”. (Szabolcsi and Zwarts 1997 232)}
\end{align*}\]

Individuals denote boolean algebras, which are closed under intersection, union and complementation. In this sense, only individuals can escape selective islands because they are closed under all boolean operations.

If parasitic gaps were a variable denoting a non-individual, there would be a relativized minimality violation induced by the temporal operator. If parasitic gaps denote individuals,
the relativized minimality violation does not arise.

4.2 Relativized Minimality and Across-the-Board Gaps

In this section, I argue that across-the-board domains of the contrastive coordination in Russian involve a null operator which induces relativized minimality violations if across-the-board gaps denote non-individuals.

4.2.1 Core Data: Contrastive vs. Non-Contrastive Coordination

Contrastive coordination, such as (39a), differs from non-contrastive coordination in (39b). The former type of coordination has a particular distribution of intonational patterns, i.e. each conjunct in the contrastive coordination is marked with the Low*High (marked by a rising pitch accent) - High*Low (marked as a falling tone) intonational pattern (as in Büring (1997), following the A and B accents in Jackendoff (1972), adopted from Bolinger (1965)).

(39) Scenario: What are the two events that happened?

a. Dima kupil knigu i Olja kupila gurnal.
   Dima bought book and Olja bought magazine
   ‘Dima bought a book and Olja bought a magazine.’

Scenario: What did Dima and Lena buy?

b. Díma kupil knigu, a Ólja kupila gurnal.
   Dima bought book A Olja bought magazine
   ‘Díma bought a boök and Ólja bought a màgazine.’

(lit.: ‘As for Dima, he bought a book, and as for Olja, she bought a magazine.’)

Constituents marked with the rising accent are topics, whereas constituents marked with the falling accent are foci. The topic-focus accent marking is encoded at logical form (LF) and is marked as $XP_{Topic}$ and $XP_{Focus}$, respectively. Consider, as an example, the sentence in (40).
Scenario: Well, what about Fred? What did he eat?

\[ \text{FRED}_{\text{Topic}} \text{ ate BEANS}_{\text{Focus}} \]

\[ \text{XP \ FRED}_{\text{Topic}} \text{ ate BEANS}_{\text{Focus}} \]

The data in Russian indicate that contrastive coordination licenses the topic-focus accent marking, whereas non-contrastive coordination does not. Compare the contrast between (41a) and (41b):

(41) a. *\text{KNIGU}_{\text{Topic}} \text{ kupil DIMA}_{\text{Focus}} \text{ i } \text{ GURNAL}_{\text{Topic}} \text{ kupila OLJA}_{\text{Focus}}
\text{book-acc bought Dima-nom and magazine-acc bought Olja-nom}

‘Dima bought the book and Olja bought the magazine.’

b. \text{KNIGU}_{\text{Topic}} \text{ kupil DIMA}_{\text{Focus}}, \text{a GURNAL}_{\text{Topic}} \text{ kupila OLJA}_{\text{Focus}}
\text{book-acc bought Dima-nom A magazine-acc bought Olja-nom}

‘Dima bought the book and Olja bought the magazine.

(lit.: ‘As for book, Dima bought it, and as for magazine, Olja bought it.’)

In (41), non-canonical word order unambiguously signals the topic-focus accent marking. Only contrastive coordination is licit in this context.

Further restrictions in the contrastive coordination reveal that each of the conjuncts has to be the topic-focus accent marked, as the ungrammatically of (42a) and (42b) suggests.

(42) a. *\text{KNIGU}_{\text{Topic}} \text{ kupil DIMA}_{\text{Focus}}, \text{a Olya kupila gurnal.}
\text{book-acc bought Dima-nom A Olja-nom bought magazine-acc}

‘Dima bought the book and Olja bought a magazine.

b. *\text{Dima kupil knigu, a GURNAL}_{\text{Topic}} \text{ kupila OLJA}_{\text{Focus}}
\text{Dima-nom bought book-acc A magazine-acc bought Olja-nom}

‘Dima bought a book and Olja bought the magazine.

In (42), non-canonical word order licenses the topic-focus accent marking only in one of the conjuncts. If only the first conjunct, as in (42a), or the second conjunct, as in (42b), is topic-focus accent marked, the sentence becomes ungrammatical.
4.2.2 Topic-Focus Licensing

I assume that the topic-focus marking is licensed at LF by a topic-focus sensitive operator $O_{\text{contrast}}$ (squiggle operator $\sim$ in [Rooth (1992)]) which uses the semantic contribution of the topic-focus marking. This yields the schematic structure of the contrastive coordination in (43).

(43) $\text{Komu i [XP } O_{\text{contrast}} [IP \text{ Artem}_{\text{Topic}} \text{ pozvonil}_{\text{Focus}} \text{ t}_i] [BP \text{ Op}_e [BP' a [XP } O_{\text{contrast}} \text{ Artem called} \text{ } \text{Dima}_{\text{Topic}} \text{ napisal email}_{\text{Focus}} \text{ t}_i]][]]$

‘Who did Artem call and Dima email?’

The presence of an additional operator in across-the-board domains of the contrastive coordination creates a context for selective islands. The operator will induce relativized minimality violations if across-the-board gaps denote non-individuals.

Each of the conjuncts in the contrastive coordination has to license the topic-focus marking suggesting that the topic-focus structure induces weak islands, as shown in (44).

(44) a. Čto MAŠE$_{\text{Topic}}$ dal DIMA$_{\text{Focus}}$?
what Maša-dat gave Dima-nom
‘What did Dima give to Maša?’

b. *Kak bystro KNIGU$_{\text{Topic}}$ pročital DIMA$_{\text{Focus}}$?
how quickly book-acc read Dima-nom
‘How quickly did Dima read the book?’

In (44a), the what-phrase can freely extract out of the topic-focus structure. In (44b), however, movement of the how-phrase is blocked.

In this section, I have shown that the semantics of the contrastive coordination requires the presence of an intervening operator in across-the-board domains. This intervening operator blocks across-the-board extractions if across-the-board gaps denote non-individuals.
5 Conclusions

In this paper, the nature of category restrictions in across-the-board and parasitic gaps has been discussed.

In English, parasitic gaps show restrictions to certain kinds of syntactic categories. On the other hand, across-the-board gaps do not show such restrictions. Postal (1993) has argued that different analyses for each construction are required. Munn (2001) has shown that independent differences in the across-the-board and parasitic gap domains can account for category restrictions in parasitic gaps. Under this analysis, a unified treatment of both constructions can be preserved.

Across-the-board gaps of the contrastive coordination in Russian show the same kind of category restrictions that parasitic gaps do. In the paper, I have argued that these category restrictions are due to properties present in the across-the-board domain of the contrastive coordination. I have shown that the semantics of the contrastive coordination requires the presence of an operator in each of the conjuncts. This intervening operator blocks across-the-board extractions if across-the-board gaps denote non-individuals. No such operator is present in the non-contrastive coordination.

Coordination data in Russian discussed in this paper provide a support for the claim that category restrictions should be attributed to inherent properties of a certain domain.
References


