

# 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) argues that independent differences in the across-the-board and parasitic gap structures can account for category restrictions in parasitic gap constructions. 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 the extraction site, which in this case is the extraction site of the contrastive coordination.*

## 1. Introduction

This paper is concerned with the nature of category restrictions in across-the-board and parasitic gap constructions. 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<sub>*i*</sub> [<sub>*XP*</sub> ... gap<sub>*i*</sub> ...] and [<sub>*XP*</sub> ... gap<sub>*i*</sub> ...]

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<sub>*i*</sub> [<sub>*XP*</sub> ... gap<sub>*i*</sub> ... [<sub>*XP*</sub> ... parasitic gap<sub>*i*</sub> ...]]

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

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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]<sub>i</sub> did John look *gap*<sub>i</sub> and (Betty) say he actually felt *gap*<sub>i</sub>?  
 b. \*[How sick]<sub>i</sub> did John look *gap*<sub>i</sub> without actually feeling *parasitic gap*<sub>i</sub>?  
 (Postal, 1993, 736)

In (3a), it is possible to move the *how*-phrase out of each conjunct and the sentence can render an 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 convey that 'John looked very sick without actually feeling very sick'. The contrast in (3) suggests that the parasitic gap structures in English are more restricted than the across-the-board gap constructions.

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 gap constructions. He shows that parasitic gap structures involve an operator that 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. Evidence comes from coordinate structures in Russian. I consider two coordinate structures 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 sentences in (4a) and (4b).

- (4) a. Scenario: What did Dima and Olja buy?  
 Dima kupil knigu, **a** Olja kupila žurnal.  
 Dima bought book A Olja bought magazine  
 '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 žurnal.  
 Dima bought book and Olja bought magazine  
 '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).

- (5) a. \*[Naskol'ko bol'nym]<sub>i</sub> Dima vygljadel *gap*<sub>p</sub>, **a** Lena utverždala, čto on  
 how sick Dima looked A Lena claimed that he  
 čuvstvoval sebja *gap*<sub>i</sub> na samom dele ?  
 felt self actually  
 '\*/??How sick did Dima look and/but Lena claim he actually felt?'

- b. [Naskol'ko bol'nym]<sub>i</sub> Dima vygljadel *gap*<sub>i</sub> i Lena utvergdala, što on  
 how sick Dima looked and Lena claimed that he  
 čuvstvoval sebja *gap*<sub>i</sub> na samom dele?  
 felt self actually  
 'How sick did Dima look and Lena claim he actually felt?'  
 c. \*[Naskol'ko bol'nym]<sub>i</sub> Dima vygljadel *gap*<sub>i</sub> ne čuvstvuja sebja *parasitic gap*<sub>i</sub>  
 how sick Dima looked NEG feeling self  
 na samom dele?  
 actually  
 '\*How sick did Dima look without actually feeling?'

In both constructions in (5a) and (5c), movement of the *how*-phrase is blocked. The fact does not hold for (5b), however.

The 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 a topic-focus structure (Büring 1997) which, in its turn, creates weak island environments, as defined in Szabolcsi and Zwarts (1997). Consider first the sentences in (6).

- (6) Scenario: What did Dima and Olja do with the books?  
 a. Dima<sub>T<sub>opic</sub></sub> knigi kupil<sub>F<sub>ocus</sub></sub>, a Olja<sub>T<sub>opic</sub></sub> (knigi/ih) prodala<sub>F<sub>ocus</sub></sub>  
 Dima books bought A Olja books/them sold  
 'Dima bought the books and/but Olja sold them.'  
 b. \*Dima<sub>T<sub>opic</sub></sub> knigi kupil<sub>F<sub>ocus</sub></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<sub>T<sub>opic</sub></sub> knigi prodala<sub>F<sub>ocus</sub></sub>  
 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<sub>T<sub>opic</sub></sub> and XP<sub>F<sub>ocus</sub></sub>, 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<sub>T<sub>opic</sub></sub> počini<sub>F<sub>ocus</sub></sub>?  
 what Dima-nom fixed  
 'What did Dima fix?'  
 b. Scenario: Dima fixed the car.  
 Čto Dima počini?  
 what Dima-nom fixed  
 'What did Dima fix?'

- c. Scenario: Olja broke the car and/but Dima fixed it quickly.

\*Kak Dima<sub>T topic</sub> mašinu počini<sub>F focus</sub>l mašinu?

how Dima-nom car fixed

‘How did Dima fix the car?’

- d. Scenario: Dima fixed the car quickly.

Kak Dima počini<sub>F focus</sub>l 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 show that the contrastive coordination is more restricted than the non-contrastive coordination. Restrictions emerge because of the properties inherent to the contrastive coordination. Each conjunct 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 contrastive coordination data in Russian provide strong evidence in support of 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 discusses properties of across-the-board and parasitic gap structures with respect to islandhood and crossover. Section 3 discusses category restrictions in across-the-board and parasitic gaps. Section 4 provides an account for restrictions in the across-the-board gaps of the contrastive coordination. Section 5 concludes the paper.

## 2. On Properties of Across-the-Board and Parasitic Gap Structures

Two approaches have been undertaken to analyze across-the-board and parasitic gap constructions. According to the first approach (Williams 1990), parasitic gap structures are treated as coordinate structures. It has been argued, however, that this approach does not make correct predictions about properties of the gaps. Parasitic gaps show restrictions that do not appear in across-the-board gaps (Postal 1993). The across-the-board formalism, in its turn, does not provide a mechanism that would account for the restrictions.

According to the second approach, across-the-board movement is viewed as parasitic gap extraction (Pesetsky 1982; Franks 1993; Munn 1993). Within this approach, across-the-board gaps are reduced to parasitic gaps and the across-the-board movement is abandoned 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). The



Strong island effects in the sentences above are comparable with the single gap violations, as shown in (11). They cannot be attributed to the properties of the multiple gap constructions alone.

- (11) a. \*Which man<sub>i</sub> did John wonder who to ask [which job to give to gap<sub>i</sub>]?  
 b. \*Which man<sub>i</sub> did John meet the man in the office [near gap<sub>i</sub>]?

The Russian across-the-board and parasitic gap structures show strong island effects too. The sentences in (12) involve wh-island violations in across-the-board (12a) and (12b), and parasitic gap structures (12c), respectively.

- (12) a. \*Kakomu sotrudniku<sub>i</sub> Dima pozvonil gap<sub>i</sub> i zadumalsja, [kakuju rabotu predložit gap<sub>i</sub>]?  
 which worker Dima called and thought which job gives  
 ‘\*Which worker did Dima call and wonder which job to give to?’  
 b. \*Kakomu sotrudniku<sub>i</sub> Dima pozvonil gap<sub>i</sub>, a potom zadumalsja, [kakuju rabotu predložit gap<sub>i</sub>]?  
 which worker Dima called A then thought which job gives  
 ‘\*Which worker did Dima call and/but then wonder which job to give to?’  
 c. \*Kakomu sotrudniku<sub>i</sub> Dima pozvonil gap<sub>i</sub> posle togo, kak podumal, [kakuju rabotu predložit parasitic gap<sub>i</sub>]?  
 which worker Dima called after thought which job gives  
 ‘\*Which worker did Dima call after wondering which job to give to?’

As in English, single gap constructions in Russian demonstrate strong island effects. The latter, therefore, cannot be attributed to the properties of the multiple gap constructions.

- (13) a. \*Kakomu sotrudniku<sub>i</sub> Dima zadumalsja, [kakuju rabotu predložit gap<sub>i</sub>]?  
 which worker Dima thought which job gives  
 ‘\*Which worker did Dima wonder which job to give to?’

## 2.2. Crossover Effects

### 2.2.1. Strong Crossover

Across-the-board and parasitic gaps behave like a *wh*-trace (Munn 2001). They show strong crossover effects both in English (14) and Russian (15).

- (14) a. \*Which man<sub>i</sub> did we talk to gap<sub>i</sub> and he<sub>i</sub> never visit gap<sub>i</sub>?  
 b. \*Which man<sub>i</sub> did we talk to gap<sub>i</sub> after he<sub>i</sub> saw parasitic gap<sub>i</sub>?  
 (15) a. \*Kakogo soseda<sub>i</sub> my priglasili v gosti gap<sub>i</sub> i on<sub>i</sub> ne navestil gap<sub>i</sub>?  
 which neighbor we invited to visit and he NEG visited  
 ‘\*Which neighbor did we invite over and he never visit?’

- b. \*Kakogo soseda<sub>i</sub> my priglasili v gosti *gap<sub>p</sub>*, a on<sub>i</sub> ne naveštil *gap<sub>i</sub>*?  
 which neighbor we invited to visit A he NEG visited  
 ‘\*Which neighbor did we invite over and/but he never visit?’
- c. \*Kakogo soseda<sub>i</sub> my priglasili v gosti *gap<sub>i</sub>* posle togo, kak on<sub>i</sub> naveštil  
 which neighbor we invited to visit after he visited  
*parasitic gap<sub>i</sub>*?  
 ‘\*Which neighbor did we invite over after he visited?’

2.2.2. Weak crossover

Across-the-board and parasitic gaps behave differently with respect to weak crossover. It has been noted that the non-initial across-the-board and parasitic gaps do not induce weak crossover (Lasnik and Stowell 1991; Munn 2001).

- (16) a. Which man<sub>i</sub> did you hire *gap<sub>i</sub>* and his<sub>i</sub> boss fire *gap<sub>i</sub>*?  
 b. \*Which man<sub>i</sub> did his<sub>i</sub> boss fire *gap<sub>i</sub>* and you hire *gap<sub>i</sub>*?
- (17) a. Which man<sub>i</sub> did you visit *gap<sub>i</sub>* just before his<sub>i</sub> boss fired *parasitic gap<sub>i</sub>*?  
 b. \*Who<sub>i</sub> did his<sub>i</sub> mother gossip about *gap<sub>i</sub>* despite you(r) having vouched for *parasitic gap<sub>i</sub>*?

The facts hold for Russian as well.

- (18) a. Kakomu mal’čiku<sub>i</sub> ty podaril CD *gap<sub>i</sub>* i ego<sub>i</sub> roditeli podarili knigu  
 which boy you presented CD and his parents presented book  
*gap<sub>i</sub>*?  
 ‘Which boy did you present a CD and his parents present a book?’  
 b. \*Kakomu mal’čiku<sub>i</sub> ego<sub>i</sub> roditeli podarili knigu *gap<sub>i</sub>* i ty podaril CD  
 which boy his parents presented book and you presented CD  
*gap<sub>i</sub>*?  
 ‘\*Which boy did his parents present a book and you present a CD?’  
 c. Kakomu mal’čiku<sub>i</sub> ty podaril CD *gap<sub>p</sub>* a ego<sub>i</sub> roditeli podarili knigu  
 which boy you presented CD A his parents presented book  
*gap<sub>i</sub>*?  
 ‘Which boy did you present a CD and/but his parents present a book?’  
 d. \*Kakomu mal’čiku<sub>i</sub> ego<sub>i</sub> roditeli podarili knigu *gap<sub>p</sub>* a ty podaril CD  
 which boy his parents presented book A you presented CD  
*gap<sub>i</sub>*?  
 ‘\*Which boy did his parents present a book and/but you present a CD?’
- (19) a. Kogo<sub>i</sub> ty pohvalil *gap<sub>i</sub>* prežde, čem ego<sub>i</sub> načal’nik uvolil *parasitic gap<sub>i</sub>*?  
 who you praised before his boss fired  
 ‘Who did you praise before his boss fired?’  
 b. \*Kogo<sub>i</sub> ego<sub>i</sub> načal’nik uvolil *gap<sub>i</sub>* prežde, čem ty pohvalil *parasitic gap<sub>i</sub>*?  
 who his boss fired before you praised  
 ‘\*Who did his boss fire before you praised?’

### 2.3. Resumptive Pronouns

Across-the-board and parasitic gaps behave differently with respect to resumptive pronouns, as the Hebrew data in (20) show (Munn 2001).

- (20) 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’

In coordinate structures, only the second conjunct can contain a resumptive pronoun if the first conjunct has a gap. The generalization holds in parasitic gap constructions:

- (21) 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’

Across-the-board and parasitic gap constructions in Russian appear to confirm the asymmetry found in the Hebrew data, as shown in (22) and (23). The first conjunct in (22a) contains a gap and the resumptive pronoun is allowed in the second conjunct. The resumptive pronoun in the second conjunct can be omitted in (22a). In (22b), on the other hand, the second conjunct contains a gap and it is not allowed to have a resumptive pronoun in the first conjunct. As a result, (22b) is ungrammatical. The same is true for the contrastive coordination in (22c) and (22d).

- (22) a. Vot eta stat’ja, kotoruju ja pročital i zatem vybrosil (ee) za  
 here this article which I read and then through-away it as  
 nenadobnost’ju.  
 not-wanted  
 ‘Here is the article that I read and then threw it away as not wanted.’  
 b. \*Vot eta stat’ja, kotoruju ja pročital ee i zatem vybrosil za  
 here this article which I read it and then threw-away as  
 nenadobnost’ju.  
 not-wanted  
 ‘\*Here is the article that I read it and then through away as not wanted.’  
 c. Vot eta stat’ja, kotoruju ja pročital, a zatem vybrosil (ee) za  
 here this article which I read A then threw-away it as  
 nenadobnost’ju.  
 not-wanted  
 ‘Here is the article that I read and/but then threw it away as not wanted.’  
 d. \*Vot eta stat’ja, kotoruju ja pročital ee, a zatem vybrosil za  
 here this article which I read it A then threw-away as  
 nenadobnost’ju.  
 not-wanted  
 ‘\*Here is the article that I read it and/but then through away as not wanted.’

Parasitic gap constructions in Russian show the same kind of asymmetry.

- (23) a. *Vot eta stat'ja, kotoruju ja pročital prežde čem ja vybrosil (ee) za*  
 here this article which I read before I threw-away it as  
*nenadobnost'ju.*  
 not-wanted  
 'Here is the article that I read before I threw it away as not wanted.'
- b. \**Vot eta stat'ja, kotoruju ja pročital ee prežde čem ja vybrosil za*  
 here this article which I read it before I threw-away as  
*nenadobnost'ju.*  
 not-wanted  
 '\*Here is the article that I read it before I threw away as not wanted.'

Asymmetric behavior of across-the-board and parasitic gap structures with respect to weak crossover and resumptive pronouns shows that gaps need to be distinguished in some way. The null operator analysis can account for differences between the gaps.

### 3. Restrictions in Across-the-Board and Parasitic Gap Constructions

#### 3.1. Semantic Type Restrictions

Parasitic gaps in English are only allowed where definite pronouns are allowed (Cinque 1990; Postal 1993, 1998; Munn 2001). Restrictions on parasitic gaps can, furthermore, be stated in terms of semantic type (Munn 2001):

- (24) a. A null resumptive pronoun denotes an element of type  $\langle e \rangle$ .  
 b. The semantic element represented by a parasitic gap must be a variable of type  $\langle e \rangle$ .

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 (24).

##### 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:

- (25) 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 (25a) 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 (25b), 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 (25a), do not allow amount readings is borne out.

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

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

The sentence in (26) 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 (27).

(27) a. Bylo izumitel’nym vino, kotoroe Dima vypil *gap* posle togo, kak Artem prolil  
 was amazing wine which Dima drank after Artem spilled  
*parasitic gap* na pol.  
 on floor

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

b. Bylo izumitel’nym vino, kotoroe my pili *gap* tem večerom.  
 was amazing wine which we drank that night  
 ‘It was amazing the wine we drank that night.’

The parasitic gap structure in (27a) does not render the amount interpretation as opposed to the non-parasitic gap structure in (27b).

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 do not:

(28) a. \*U nas zanjalo by nedeli, čtoby vypit’ vino, kotoroe Artem prolil *gap*, a  
 by us took would weeks that drink vine which Artem spilled A  
 Dima vypil *gap*.  
 Dima drank

‘It would take us weeks to drink the wine that Artem spilled and/but Dima drank.’

b. U nas zanjalo by nedeli, čtoby vypit’ vino, kotoroe Artem prolil *gap* i  
 by us took would weeks that drink vine which Artem spilled and  
 Dima vypil *gap*.  
 Dima drank

‘It would take us weeks to drink the wine that Artem spilled and Dima drank.’

Across-the-board gaps of the non-contrastive coordination in (28b) 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 (28a).

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):

- (29) 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 (29) has the interpretation in (29a). It cannot, however, be interpreted as in (29b) which is the sloppy identity reading of the parasitic gap. Under Chierchia's analysis of functional readings (Chierchia 1993), the sloppy identity reading obtains from 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 (29b) would arise from the LF below.

- (30) LF: [<sub>CP</sub> which poem<sub>i</sub> did [<sub>IP</sub> every poet<sub>j</sub> [<sub>IP</sub> throw out gap<sub>i</sub><sup>j</sup> [before her agent<sub>k</sub> read *parasitic gap*<sub>i</sub><sup>k</sup>]]]]]

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):

- (31) 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. [<sub>CP</sub> which restaurant]<sub>i</sub> did Bill<sub>x</sub> review t<sub>i</sub><sup>x</sup> on Tuesday and Fred<sub>y</sub> review t<sub>i</sub><sup>y</sup> on Wednesday?

In the given context, the question in (31a) can be answered with 'Bill<sub>x</sub> reviewed his<sub>x</sub> first restaurant and Fred<sub>y</sub> reviewed his<sub>y</sub> second restaurant', which is the sloppy identity reading of the question. This reading arises from the LF in (31b).

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:

- (32) Kako<sub>j</sub> restoran Artem proveril vo vtornik *gap*, posle togo, kak Dima proveril  
 which restaurant Artem inspected on Tuesday after Dima inspected  
*parasitic gap* v ponedelnik?  
 on Monday  
 'Which restaurant did Artem inspect on Tuesday after Dima inspected on Monday?'  
 a. Artem<sub>i</sub> inspected his<sub>i</sub> most successful restaurant on Tuesday after Dima inspected it on Monday.  
 b. \*Artem<sub>i</sub> inspected his<sub>i</sub> most successful restaurant on Tuesday after Dima<sub>y</sub> inspected his<sub>y</sub> most successful restaurant on Monday.

Parasitic gaps in Russian do not license the sloppy identity reading, as the starred interpretation of (32) in (32b) indicates. They are, thus, subject to the semantic type constraint in (24), 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 do not:

- (33) a. *Kakoj restoran Artem proinspektiroval vo vtornik i Dima*  
 which restaurant Artem inspected on Tuesday and Dima  
*proinspektiroval v sredu?*  
 inspected on Wednesday  
 ‘Which restaurant did Artem inspect on Tuesday and Dima inspect on Wednesday?’
- i. Artem<sub>x</sub> reviewed his<sub>x</sub> first restaurant and Dima<sub>y</sub> reviewed his<sub>y</sub> second restaurant.
- b. *Kakoj restoran Artem proinspektiroval vo vtornik, a Dima proinspektiroval*  
 which restaurant Artem inspected on Tuesday A Dima inspected  
*v sredu?*  
 on Wednesday  
 ‘Which restaurant did Artem inspect on Tuesday and Dima inspect on Wednesday?’
- i. \*Artem<sub>x</sub> reviewed his<sub>x</sub> first restaurant and Dima<sub>y</sub> reviewed his<sub>y</sub> second restaurant.

The question in (33a) allows the sloppy identity interpretation, such as (33a-i). No such interpretation is available in (33b).

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.

The category restrictions in parasitic gaps show that the extraction in parasitic gaps in English is subject to the constraint stated in (24). Parasitic gaps and across-the-board gaps of the contrastive coordination in Russian also show category restrictions. The question that arises is why across-the-board gaps of the contrastive coordination are subject to the constraint in (24). 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 are subject to the restriction in (24). 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 (34), constitute selective islands (Munn 2001).

- (34) 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:

$$(35) [{}_{P} \text{Op}_{pg} \text{ before } [{}_{C} \text{Op}_{temp} [{}_{I} \text{P} \dots \tau_{pg} \dots \tau_{temp}]]]$$

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:

- (36) a. What do you know how to fix?  
 b. \*How do you know what to fix?  
 c. What didn't you fix?  
 d. \*How didn't you fix the car?  
 e. What did John frequently say that Bill bought?  
 f. \*Why did John frequently say that Bill bought books?

(36a) and (36b) show that referential arguments can extract over *wh*-islands, whereas adjuncts cannot. (36c), (36d) and (36e), (36f) 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:

- (37) "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)

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. Across-the-Board Gaps in Contrastive Coordination

### 4.2.1. Core Data: Contrastive vs. Non-Contrastive Coordination

Contrastive coordination, such as (38a), differs from non-contrastive coordination in (38b). 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).

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

- a. Dima kupil knigu **i** Olja kupila ġurnal.  
 Dima bought book and Olja bought magazine  
 ‘Dima bought a book and Olja bought a magazine.’  
 Scenario: What did Dima and Lena buy?
- b. Dima kupil knigu, **a** Ólja kupila ġurnàl.  
 Dima bought book A Olja bought magazine  
 ‘Dima bought a book and/but Ólja 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  $XP_{T\text{opic}}$  and  $XP_{F\text{ocus}}$ , respectively. Consider, as an example, the sentence in (39).

(39) Scenario: Well, what about Fred? What did he eat?

- FRED $_{T\text{opic}}$  ate BEANS $_{F\text{ocus}}$   
 LF: [ $XP_{T\text{opic}}$  FRED $_{T\text{opic}}$  ate BEANS $_{F\text{ocus}}$ ]

The data in Russian indicate that contrastive coordination licenses the topic-focus accent marking, whereas non-contrastive coordination does not. Compare the contrast between (40a) and (40b):

- (40) a. \*KNIGU $_{T\text{opic}}$  kupil DIMA $_{F\text{ocus}}$  **i** ĢURNAL $_{T\text{opic}}$  kupila OLJA $_{F\text{ocus}}$   
 book-acc bought Dima-nom and magazine-acc bought Olja-nom  
 ‘Dima bought the book and Olja bought the magazine.’
- b. KNIGU $_{T\text{opic}}$  kupil DIMA $_{F\text{ocus}}$  **a** ĢURNAL $_{T\text{opic}}$  kupila OLJA $_{F\text{ocus}}$   
 book-acc bought Dima-nom A magazine-acc bought Olja-nom  
 ‘Dima bought the book and/but Olja bought the magazine.’

In (40), 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 ungrammaticality of (41a) and (41b) suggests.

- (41) a. \*KNIGU $_{T\text{opic}}$  kupil DIMA $_{F\text{ocus}}$  **a** Olja kupila ġurnal.  
 book-acc bought Dima-nom A Olja-nom bought magazine-acc  
 ‘Dima bought the book and Olja bought a magazine.’
- b. \*Dima kupil knigu, **a** ĢURNAL $_{T\text{opic}}$  kupila OLJA $_{F\text{ocus}}$   
 Dima-nom bought book-acc A magazine-acc bought Olja-nom  
 ‘Dima bought a book and Olja bought the magazine.’

In (41), non-canonical word order licenses the topic-focus accent marking only in one of the conjuncts. If only the first conjunct, as in (41a), or the second conjunct, as in (41b), is topic-focus accent marked, the sentence becomes ungrammatical.

#### 4.2.2. *Topic-Focus Structure and Weak Islands*

The topic-focus structure induces weak island effects:

- (42) a. Scenario: Olja broke the car and/but Dima fixed it.  
 Čto Dima<sub>T<sub>opic</sub></sub> počini<sub>F<sub>ocus</sub></sub>?  
 what Dima-nom fixed  
 ‘What did Dima fix?’
- b. Scenario: Dima fixed the car.  
 Čto Dima počini?  
 what Dima-nom fixed  
 ‘What did Dima fix?’
- c. Scenario: Olja broke the car and/but Dima fixed it quickly.  
 \*Kak Dima<sub>T<sub>opic</sub></sub> mašinu počini<sub>F<sub>ocus</sub></sub>?  
 how Dima-nom car fixed  
 ‘How did Dima fix the car?’
- d. Scenario: Dima fixed the car quickly.  
 Kak Dima počini mašinu?  
 how Dima-nom fix car  
 ‘How did Dima fix the car?’

The sentences in (42a) and (42b), on the one hand, and in (42c) and (42d), on the other hand, form minimal pairs differing only in the topic-focus marking. Both structures in (42a) and (42b) allow extraction of the *what*-phrase. In (42c), however, movement of the *how*-phrase is blocked and the interpretation that ‘Dima fixed the car quickly’ is barred. The contrast between (42a) and (42c) 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.

## 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 each conjunct of the contrastive coordination to represent a topic-focus structure. The topic-focus structure blocks across-the-board extractions if across-the-board gaps denote non-individuals. There are no such restrictions in the non-contrastive coordination.

The Russian coordination data discussed in this paper provide support for the claim that category restrictions should be attributed to inherent properties of the extraction site.

## References

- Bolinger, Dwight, 1965, *Forms of English: Accent, Morpheme, Order*. Cambridge, MA: Harvard University Press.
- Büring, Daniel, 1997, *The Meaning of Topic and Focus*. Routledge, London and New York.
- Carlson, Greg, 1977, «Amount relatives», *Language* 53:520-542.
- Chierchia, Gennaro, 1993, «Questions with quantifiers», *Natural Language Semantics*, 1:181-234.
- Chomsky, Noam, 1986, *Barriers*. MIT Press.
- Cinque, Guglielmo, 1990, *Types of A'-dependencies*. MIT Press.
- Franks, Steven, 1993, «On parallelism in across-the-board dependencies». *Linguistic Inquiry* 24:509-529.
- Grosu, Alexander and Fred Landman, 1998, «Strange relatives of the third kind», *Natural Language Semantics* 6:125-170.
- Haik, Isabelle, 1985, *The syntax of operators*. Ph.D. Dissertation, MIT.
- Heim, Irene, 1987, «Where does the Definiteness Restriction apply? Evidence from the definiteness of variables». In: Eric J. Reuland and Alice G. B. ter Meulen (eds.), *The representation of (in)definiteness*, MIT Press, 21-42.
- Huybregts, Riny and Henk van Riemsdijk, 1985, «Parasitic gaps and ATB», *Proceedings of NELS*, 15:168-187.
- Jackendoff, Ray, 1972, *Semantic interpretation in generative grammar*. Cambridge, MA: MIT Press.
- Kayne, Richard, 1983, «Connectedness», *Linguistic Inquiry* 14:223-250.
- Larson, Richard, 1990, «Extraction and multiple selection in PP», *The Linguistic Review* 7:169-182.
- Lasnik, Howard and Tim Stowell, 1991, «Weakest Crossover», *Linguistic Inquiry* 22:647-686.
- Munn, Alan, 1993, *Topics in the syntax and semantics of coordinate structures*. Ph.D. Dissertation, University of Maryland, College Park.
- , 2001, «Explaining parasitic gap restrictions». In: Peter W. Culicover and Paul M. Postal (eds.), *Parasitic Gaps*. MIT Press, 369-392.
- Pesetsky, David, 1982, *Paths and Categories*. Ph.D. Dissertation, MIT.
- Postal, Paul, 1993, «Parasitic gaps and the across-the-board phenomenon», *Linguistic Inquiry* 24:735-754.
- , 1998, *Three investigations of extractions*. Cambridge, MIT Press.
- Rizzi, Luigi, 1996, «Relativized Minimality». In: Samuel Jay Keyser (ed.), *Linguistic Inquiry Monographs* 16. The MIT Press.
- Rooth, Mats, 1992, «A Theory of Focus Interpretation», *Natural Language Semantics* 1:75-116.
- Sells, Peter, 1984, *Syntax and Semantics of Resumptive Pronouns*. Ph.D. Dissertation, UMass.
- Szabolcsi, Anna and Frans Zwarts, 1997, «Weak islands and an algebraic semantics for scope taking». In: Anna Szabolcsi (ed.), *Ways of scope taking*. Dordrecht: Kluwer, 217-262.
- Williams, Edwin, 1990, «The ATB theory of parasitic gaps», *The Linguistic Review* 6:65-79.