Restrictive and non-restrictive adjectives

Formal Semantics and Lexical Semantics
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1. Introduction. Within DP

1.1. Determiners, arguments, modifiers

At the beginning let’s distinguish the following types of constituents within a DP: determiners, arguments, modifiers. They are syntactically different and play different semantic roles.

Determiners are usually articles, possessive pronouns, deictic pronouns or quantifiers (the student who loves Mary, my cat, that beautiful dog, every angry professor). Firstly, there can be one and only one determiner within a DP (there are several exceptions, for example, all: all my pets – but all isn’t a clear determiner): *the my schoolmates. Secondly, in English, for example, they are always on the leftmost periphery of: *curious the student, *funny the ball (the same is true for German or for Swedish, but in some Scandinavian languages articles are “suffixed” to the noun, if there isn’t any adjective or modifier between them). And finally, their function is to describe the DP’s reference. Paducheva in [Падучева 1985] uses a cover term for all the words and phrases that denote the way the DP is related to the reality (in Paducheva’s terms; in formal semantics, I suppose, “the reality” corresponds to the Model). The term is «актуализаторы».

Arguments are usually PPs or NPs: the teacher of French [Partee 1995:6]. Relational nouns like teacher or father can have arguments. “When an NP or a PP fills in a slot in such a relation, it is called an argument of the head” [Partee 1995:7]. Arguments can’t be added recursively: *teacher of French of French literature, cf. for serious economic crimes [LEEDs ENG]. There is a pro-form in English, namely, one that can replace only an N’ projection [Baker 1978]: a good teacher from France, and two bad ones from Italy, cf. *a good teacher of French and two bad ones of English.

Finally, modifiers can be NPs, PPs, APs or relative clauses (RELs):

(1) a. Lance, a cyclist, is from Texas [Potts 2007:489] (22.a) – NP
   c. the very curious student – AP
   d. Is even Clarence, who is wearing mauve socks, a swinger? [Cinque 2008:102] (7.a) – REL

Semantically modifiers somehow change the set of entities denoted by a NP: the teacher from France is an entity, which is in the “teacher” set and in the set of entities which are “from France”.

1.2. Restrictive vs. non-restrictive modifiers (R vs. NR)

1.2.1. Two different types of modification

Modifiers may be of two different types, namely restrictive vs. non-restrictive modifiers (R vs. NR). Consider the following example:

(2) a. The boy who loves Mary is happy.
   b. The boy, who loves Mary, is happy.

The first sentence is true if there is one and only one boy such that he loves Mary and the boy is happy. The second sentence is true if there is one and only one boy and he is happy. And additionally it’s said in the second sentence that the boy loves Mary (but, unlike the first sentence, there may be some other boys who love Mary too). More precisely, restrictive modifiers play a role in determining the reference of the DP, while non-restrictive modifiers don’t. Non-restrictive modifiers add some new, additional information to the semantics of a sentence.

Restrictive and non-restrictive may be distinguished grammatically, phonetically (by “comma” intonation in Russian, English) or orthographically (by comma in English). It’s useful in testing a modifier for restrictiveness to answer the question “which N?” [Partee 1995]: restrictive modifiers can be easily replaced by which in this question, while non-restrictive can’t. In the literature on R and NR RELs there is mentioned a plenty of syntactic and semantic diagnostics to distinguish them (see section 2 below). The most wide-spread test is a possibility to modify a proper noun. Proper nouns are usually definite, so they can be modified only non-restrictively: Иван Иванович, которого я видел вчера ‘Ivan
Ivanovich, whom I saw yesterday’ (non-restrictive\(^1\)).

In (2) there are a restrictive and a non-restrictive REL. Other modifiers can also be restrictive or non-restrictive:

(3) a. the young people, ready for war – NR AP (the young people are ready for war)
   b. the young people ready for war – R AP (the young people who are ready for war)\(^2\)

As for APs, they can be both R or NR modifiers, which is marked by comma in English, if AP follows DP (like in (3)). It’s interesting, that if in a DP there is an AP between the N-head and the determiner (as in (4)) it is also ambiguous between R and NR interpretations [Partee 1995:7]:

(4) a. the curious student – R AP, denotes one and only one curious students (there may be more than one students in the Model)
   b. the curious student – NR AP, denotes the student and says that he is curious (there is one and only one student in the Model)

1.2.2. Different structures?

In case a modifier is between the determiner and the N-head in a DP, there are three possible analyses (in the framework of X’-theory):

(5) a. the curious student, structure 1

The structures (5.a) and (5.b) aren’t good analyses for DPs by many reasons, we’re not going to discuss here in detail. There are some obvious arguments, like the fact, that modifiers can be attached recursively (which is possible neither for

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\(^1\)Unless there is a type-shift, when ‘Ivan Ivanovich’ denotes the set of all of his ‘temporal instantiations’. So it’s a common noun now. For example, Ivan Ivanovich had an opinion about a problem yesterday, but now he’s changed it, so Иван Иванович, которого я видел вчера denotes the “yesterday version” of Ivan Ivanovich, who has an opinion about the problem. In English that would be the Ivan Ivanovich who I saw yesterday. No comma. I.I. denotes the set of all of his ‘temporal instantiations’. And then a modifier can cut down that set to some specific subset, like the set of his instantiations at all times that were within yesterday, or for short, his “yesterday version”.

\(^2\)Example by B.H. Partee
(5.a) nor for (5.b)), or the fact, that, at least in English, N-head with its modifiers is a constituent, for example, it can be replaced by a pro-form, namely, by *one* (which doesn’t correspond to the structure (5.a)).

In case a DP follows its modifier there is one possible decision, which is shown in (6):

(6) **веселый Иван Иванович**

In case a DP follows its modifier there is one possible decision, which is shown in (6):

And finally, there are several possibilities to analyze the syntactic structure of a DP followed by a modifier:

(7) a. the students ready for war, structure 1

b. the students ready for war, structure 2

c. the students ready for war, structure 3

d. the students ready for war, structure 4
While (7.a) and (7.b) are much like (5.a) and (5.b) respectively and so not so good, (7.c) and (7.d) are both possible. In case we treat semantics Ds as something which denotes the type of the DP’s reference, it seems that (7.c) is better for restrictive, while (7.d) is better for non-restrictive modifiers (see section 2 below and [Partee 1995], [Partee 2013] for more arguments).

2. Relative clauses (RELs)

Let’s focus on relative clauses first, since this type of modifiers has been more widely researched in point of contrast between restrictive vs. non-restrictive than other ones (see [Partee 2005], [Partee 2010], [Partee 2013]).

2.1. Semantics of RELs. Restrictive case

In times of transformational grammar and generative semantics the main semantic discussion about relative clauses was devoted to the opposition conjunction vs. if-clause [Stockwell et al 1973]. Sometimes (like in (8.a)) the semantics of a relative clause seems to be conjoined with the semantics of the main sentence. And sometimes (like in (8.b)) a relative clause seems to be interpreted as an embedded clause with the complementizer if:

(8)  

\[ a. \text{ John ate a fish that he caught. – Approximately: John caught a fish and John ate a fish (plus “identity”) } \]  
\[ \text{[Partee 2005:2] (1.a)} \]

\[ b. \text{ John ate every fish that he caught – Approximately: If John caught a fish, he ate a fish (plus “identity”) } \]  
\[ \text{[Partee 2005:3] (2)} \]

The interpretation of the relative clause in (8) looks like (9) according to this analysis:

(9) \[ \| \text{ that he caught } \| = \lambda x_e [\text{he_caught}(x)]; <e,t> \]

By derivation of relative clause, the trace from wh-pronoun is interpreted as a free variable. And then a λ-abstraction rule is applied:

Relative Clause Rule, syntax: If φ is S and φ contains an indexed pronoun he/him, in relativizable position, then the result of adjoining who(m) to S and leaving a trace e in place of he/him, is a REL.

Relative Clause Rule, semantics: If φ translates as φ’, then REL translates as λx_e[φ’] [Partee 2005:4]

So relative clauses are now analyzed as lambda abstracts. The structure is shown in (10):

(10) man who Mary loves
All the differences between so-called if-interpretation and conjunction-interpretation are now following from the semantics of the determiner. So if-semantics, for example, is provided by the determiner *every*, which is interpreted as

\[ \lambda Q. P \left[ \forall x (Q(x) \rightarrow P(x)) \right] \]

(11) Every man who loves Mary is happy

This seems to be a good interpretation of restrictive RELs, since they play a role in determining the reference of a DP: as all `<e,t>` modifiers they denote sets, which are intersected with the set of N.

For restrictive RELs then the structure (7.c) is a good analysis (look at derivations (10) and (11)), so they are attached to a DP before determiners, but not after them. If they had merged with a full-formed DP, and if the DP had been of type `<e>` or `<e,<t,t>>`, the result, which is syntactically a DP, would have been of type `<t>` which is not a correct type for a DP.

2.2. Semantics of RELs. Non-restrictive case

2.2.1. R and NR distinction

The difference between restrictive and non-restrictive relative clauses is more or less grammaticized in different languages. There are semantic, phonetic, orthographic and syntactic differences. For example, [Lin 2003] refers to twelve different diagnostics of restrictiveness, mentioned in the literature [Lin 2003:15]:

I. While the antecedent of a non-restrictive relative can be any maximal projection, the antecedent of a restrictive relative can only be an NP.

(12) He said he would resign, which I thought was a good idea. [Partee 2005]

II. While sentential adverbs can appear inside non-restrictive relatives, they cannot occur inside restrictive relatives.
(13) У меня есть просто те обрезы, которым я следую, которые уже, видимо, стали частью моей «сочинительской» натуры. [Лютикова 2011]

I simply have the models which I follow, which apparently have become a part of my nature of an author.

III. While non-restrictive relatives can modify pronouns, restrictive relatives may not.

(14) Ни один человек, даже я, [APP*REST который часто приезжал к ней рано утром]... [Лютикова 2011]

Noone, even I, who have often visited her early in the morning...

IV. While a quantified NP can be the antecedent of a restrictive relative, it is incompatible with a non-restrictive relative. Since a restrictive relative combines with an NP to make an NP, there is no restriction on the Det that then combines with the bigger NP. But a non-restrictive can only combine with an e-type DP; it can’t have a quantified DP as antecedent.

(15) *Any plane, which crashes, is a failure. [Partee 2005]

V. While a quantifier in the matrix clause can have scope over a pronoun in a restrictive relative, the same is not true for a non-restrictive relative.

VI. While a NP modified by a restrictive relative can be within the scope of a matrix negation, this is not so for a NP modified by a non-restrictive relative.

VII. While a non-restrictive relative has to appear DP-finally, a restrictive relative need not to appear DP-finally.

VIII. While restrictive relatives allow stacking, non-restrictive relatives do not.

IX. While non-restrictive relatives can be used to qualify unmodified proper names, restrictive relatives cannot.

(16) *John that came early also left early. [Partee 2005]

X. While non-restrictive relatives allow pied-piping, restrictive relatives don’t.

XI. While VP anaphora may include a restrictive relative, it may not include a non-restrictive relative.

XII. While restrictive clauses are in the scope of intensional verbs, non-restrictive relatives are not.

Several of these tests are most important: for example, III, IV, IX, which all are about the fact that NR RELs can modify constituents of type e, but not of type <e,t>, while R RELs modify only <e,t>-constituents. And there are some other differences, widely mentioned, for example, in English only R RELs permit that as a relative pronoun (in Russian only R RELs permit что as a relative pronoun [Лютикова 2011]).

Semantically NR RELs add a proposition to the interpretation of the sentence as a conjunct [Potts 2005], [Potts 2007]. So, for example, (13) means something like ‘I simply have the models which I follow and they apparently have become a part of my nature of an author’.

2.2.2. “Classical” Potts’s multi-dimensional analysis

In [Potts 2005] and [Potts 2007] there has been derived an analysis of non-restrictive modifiers as conventional implicatures.

In [Potts 2007] Potts postulates that nominal adjuncts like Armstrong, the cyclist, (and other non-restrictive modifiers) are conventional implicatures (CI), which are a specific type of not deniable, lexical and not backgrounded entailments [Potts 2007:482]. CIs are determined as entailments, having the following properties:

(17) a. CIs are part of the conventional (lexical) meaning of words.

b. CIs are commitments, and thus give rise to entailments.

c. These commitments are made by the speaker of the utterance “by virtue of the meaning of” the words he chooses

d. CIs are logically and compositionally independent of what is “said (in the favoured sense)”, that is, the at-issue entailments. [Potts 2007:476]

What is important is that CIs aren’t conversational implicatures, presuppositions or at-issue meanings. At least they aren’t presuppositions. “Presuppositions and CIs share the important lexicality property ((17.a) – D.P.), but they diverge on almost all other substantive points” [Potts 2007:484]

For example, CIs can’t be cancelled by presuppositional plugs, like the verb say. In (18.a) the fact that it was raining is presupposed by the clause of realized, but it’s not presupposed by the whole sentence. The verb say cancels this presupposition. While in (18.b) the fact that John is Sue’s brother is CI for the clause of realized and for the whole sentence:
a. Ed said that Sue realized that it was raining [Potts 2007:486] (Suppose that Ed was wrong. Sue cannot have realized that it’s raining, because it was not).

b. Ed said that Sue realized that John, her brother, is leaving.

While non-restrictive modifiers are speaker-oriented, they cannot be cancelled by verbs of saying and other performatives:

(19) Sheila says that Chuck, a confirmed psychopath, is fit to watch the kids [Potts 2007:477]

In the situation described by (19), it’s possible that Sheila doesn’t say “a confirmed psychopath”, which means that Sheila doesn’t say that Chuck is a confirmed psychopath. But she says that he is fit to watch the kids.

Potts analyzes non-restrictive RELs with a help of so to say “two levels” of semantic interpretation. Language terms may be marked with so-called CI interpretation. CI logic has its own types (“common” types are called at-issue types):

(20) a. e_, t_, and s_ are basic at-issue types.
    b. e_c, t_c, and s_c are basic CI types.
    c. If t and s are at-issue types, then <t,s> is an at-issue type.
    d. If t is an at-issue type and s is a CI type, then <t,s> is a CI type.
    e. The full set of types is the union of the at-issue and CI types. [Potts 2007:489]

One of the crucial diagnostics of non-restrictive modifiers according to Potts is a “comma intonation”. It’s true that, when a non-restrictive modifier follows a DP, like in (3), there is no surface difference between R and NR interpretations, except the comma, or in spoken language the comma intonation. So Potts adds a comma operator, shown in (21.a), which makes a non-restrictive modifier from a “common” modifier, like NP, AP or REL. Namely, comma takes an <e_n, t_n> predicate and returns an <e_a, t_c> predicate:

(21) a. comma λfλx. f(x): <<e_a, t_a>, <e_a, t_c>> [Potts 2007:495]
    b. comma(cyclist):

    \[
    \text{cyclist} : \langle e^a, t^c \rangle
    \]

And then this <e_a, t_c> predicate is merged with a DP of type <e_c>:

(22) Lance, cyclist [Potts 2007:478]

\[
\text{lance} : e^a
\]

\[
\text{comma (cyclist) (lance)} : t^c
\]

\[
\text{lance} : e^a \quad \text{comma (cyclist)} : \langle e^a, t^c \rangle
\]

\[
\text{cyclist} : \langle e^a, t^a \rangle
\]

The point in (22) means nothing, this is a way of distinction of these “two levels” of interpretation – CI and at-issue.

According to the analysis, NR modifiers are merged with an <e_c>-constituent, that is, with a DP. So, while the structure (7.c) is good for restrictive modifiers, for non-restrictive modifiers we propose the structure (7.d).

This analysis explains many semantic effects of non-restrictive modifiers, for example, the fact that they cannot modify a quantified NP: *every climber, experienced adventurers – except several cases, for example, it’s possible to say every climber, all experienced adventurers in English [Potts 2007:494]. For such cases Potts proposes a so-called isolated CI analysis. The CI all experienced adventurers is analyzed as a kind of small CI clause, which doesn’t modify at-issue semantics at all:

(23) Isolated CIs [Potts 2007:494]
(23) is also a good analysis for parenthetic sentences like the following:

(24) ...which sum is returned to him (though seldom without difficulties) when he quits the country [LEEDs ENG]

2.2.3. Lyutikova’s analysis of R vs. NR RELs in Russian

In Russian there is also a distinction between restrictive and non-restrictive relative clauses (compare the sentences (25.a) and (25.b)):

(25) a. Варвара прилегает к плечу Кудряша, который, не обращая внимания, тихо играет [Лютикова 2011]
    Varvara rests on Kudryash’s shoulder, who(Kudryash) is playing quietly without paying attention
    b. Музыканты, которые тихо играют, не будут приняты в эту школу.
    Players who play quietly won’t be admitted to the school

In [Лютикова 2011] Lyutikova discusses syntax and semantics Russian R and NR relative clauses. There are several grammaticalized differences between them, like in English. For example, as in English, Russian R RELs (unlike NR ones) can be headed by the complementizer что:

(26) a. Мальчишка, что меня сюда привел, говорил, что у вас Арина бывает
    The boy that brought me here says that Arina is sometimes at your place
    b. *Петька, что меня сюда привел, говорил, что у вас Арина бывает [Лютикова 2011]
    *Peter, that brought me here, says that Arina is sometimes at your place

While the pied-piping effect in R clauses is limited by the convergence principle, in NR ones it’s limited only by thematic-rhematic relations:

(27) a. Обе программы выходят под нашей маркой, это означает, что делаются они одной командой, [NR
    {руководит которой} {мой муж Сергей Варновский}].
    Both programs are aired under our pretext, this means that they are made by one team, which my husband, Sergey Varnovsky, is leading.
    b. *Назовите тус команду, [RESTR руководит которой Сергей Варновский] [Лютикова 2011]
    *Name the team which Sergey Varnovsky is leading

According to Lyutikova’s analysis of Russian RELs, R clauses are of type <e,t>, like in classical Montague grammar. They are merged with N’ projection of a DP. Wh-pronoun is moved from its position within a R relative clause to Spec,CP. So the pied-piping effect is limited by the principles of this movement. R RELs with что, as Lyutikova says, may be analyzed as clauses with null operator.

NR relative clauses are analyzed just like parenthetical ones. They are attached to a DP. Wh-pronoun within them is an anaphoric proform, which is coreferent to this DP. It’s moved to the left periphery of the clause, because of the fact, that it’s definite and given, that is, it’s within the theme of the clause. So it’s another movement and the pied-piping effect is less limited. The complementizer что can’t be a pronoun, so it can’t occur within NR relative clauses.

As for semantics, I think Lyutikova’s treatment of Russian NR relative clauses corresponds to Potts’s analysis of isolated CIs (23). These clauses aren’t of type <e,t> they are “already” of type <t,> and so to say there are invisible brackets around them.

2.2.4. Types of NR RELs

In [Lin 2003] there is discussed a question of Chinese NR vs. R relative clauses. In Chinese RELs can be attached to a proper noun and to a DP. In the latter case they may follow the determiner or stay before it:

(28) a. [dai yanjing de]REL na-ge xuesheng
    the student who is wearing glasses.
b. na ge \[dai\] \[yanjing\] \[de\] \[xuesheng\] [Lin 2003:3] 
that CI wear glass Rel student

\textit{the student who is wearing glasses}

c. \[xianglai\] \[jiu\] \[bu\] \[ai\] \[du\] \[shu\] \[de\] \[xuesheng\] [Lin 2003:22] 
always then not love study book Rel Xiaoming

\textit{Xiaoming, who does not love to study...}

The clauses in (28.a) and (28.b) are called pre-DNC and post-DNC relatives respectively. Lin discusses several works on Chinese relative clauses. In [Del Gobbo 2001] it’s postulated that there are no NR relative clauses in Chinese. So Chinese relatives seem not to pass the most important non-restrictiveness tests (see section 2.2.1).

Lin’s suggestion is close to this analysis. He supposes that both pre-DNC and post-DNC relatives are restrictive, while relatives modifying proper nouns are non-restrictive, if they describe a more or less stable unchangeable property. Such clauses fail several non-restrictive tests, but Lin thinks that these tests aren’t valid for Chinese. So he assumes that there are at least two types of relative clauses: Chinese RELs and English RELs, which have different syntactic and semantic properties.

This fact was analyzed in [Cinque 2008]. Cinque, researching Italian RELs, supposes that there are two types of NR relative clauses. The first type, integrated RELs, is “more restrictive” and more like Chinese RELs modifying proper nouns. This is the type of Italian clauses with \textit{che/cui}. The second type, non-integrated RELs, is “more non-restrictive”. This is the type of Italian clauses with \textit{il quale}. English NR relatives are of the latter type.

Cinque analyses mainly syntactic differences. And the most important are the following.

For integrated RELs (\textit{che/cui}):

(29) a. Subjects and direct objects are represented not by a relative pronoun but by the complementizer \textit{che}
   b. Prepositional objects are represented by the relative pronoun \textit{cui} preceded by a preposition
   c. No Pied Piping is possible except for that of a prepositional phrase

For non-integrated RELs (\textit{il quale}):

(30) a. Subjects and direct objects are represented by the relative pronoun \textit{il quale}
   b. Prepositional objects are represented by the relative pronoun \textit{il quale} preceded by a preposition
   c. Pied Piping of different types of phrases is available

There are some more differences, for example, the head of integrated RELs can be only DP, while non-integrated RELs are attached to any XP projection (compare (12)):

(31) a. Carlo lavora troppo poco. \textit{La qual cosa} verrà certamente notata. [Cinque 2008:106]
   C. works too little. Which thing will certainly be noticed.
   b. Carlo lavora troppo poco. *\textit{Che} verrà certamente notato.
   C. works too little. That will certainly be observed.

But there are also non-restrictive properties, which both kinds of RELs have. So they aren’t restrictive. For example, they both can have speech act adverbs within them, which is a “non-restrictive” possibility:

(32) a. Giorgio, \textit{che francamente} non si sarebbero mai dovuto comportare così], … [Cinque 2008:109]
   \textit{G., who (lit. that) frankly should never have behaved like that, …}
   b. Giorgio, \textit{il quale francamente} non si sarebbero mai dovuto comportare così], …
   \textit{G., who frankly should never have behaved like that, …}

So non-restrictiveness splits into two classes. Cinque proposes a syntactic analysis of these two types of NR RELs, according to which the integrated RELs are attached to a DP a bit earlier than non-integrated ones. But he doesn’t propose any semantic distinction between their interpretations.

There may be both types of NR RELs in a language, like in Italian, French or Spanish, or there may be only non-integrated, like in English, or there may be only integrated NR RELs, like in Chinese.

3. R vs. NR adjectives. Some ideas
Let’s look at Russian and English adjectives as R and NR modifiers. As shown in section 1, they may follow a DP and in this case they may be either restrictive or non-restrictive, just as RELs:

**ENGLISH:**

(33) a. Theatres, ready to tell us tales, ancient and modern, specialise for children. [LEEDs ENG] – *theatres specialise for children and they are ready to tell us tales*

   b. Theatres ready to tell us tales specialise for children. – *theatres which are ready to tell us tales specialise for children*

**RUSSIAN:**

(34) a. И, конечно, всегда найдутся разработчики, готовые безжалостно эксплуатировать наши ностальгические чувства… [LEEDs RUS]

   *And of course, there will always be developers ready to exploit our nostalgia.*

b. Эти разработчики, готовые безжалостно эксплуатировать наши ностальгические чувства…

   *These developers, ready to exploit our nostalgia…*

Potts’s analysis of non-restrictive NP modifiers as <eₐ,tₜ> predicates seems to be a good one for non-restrictive APs, like in (33.a) or (34.b). They modify the whole DP and in English they must be preceded by comma. In Russian, according to my intuition, such APs always involve a comma intonation in spoken language, that is, there is always a pause between the DP and it’s non-restrictive AP.

So, according to Potts’s analysis, both (33.a) and (34.b) sentences have a comma-operator, which modifies the type of the APs from <eₐ,tₜ> to <eₐ,tₜ>. And then they are merged with their DPs of type <eₐ>. And as a result we have a DP with <eₐ>-type semantics at-issue, that is, the DPs *theatres, ready to tell us tales and эти разработчики, готовые безжалостно эксплуатировать наши ностальгические чувства* in (33.a) and (34.b) respectively denote entities¹. And they have <tₜ>-type semantics at the “level” of CI, that is, the clauses *theatres are ready to tell us tales and эти разработчики готовы безжалостно эксплуатировать наши чувства*.

In case AP is between the determiner and N-head it’s also ambiguous between R and NR interpretation (in Russian and in English):

**ENGLISH:**

(35) a. I found the fearless leader in the classroom. – *there is one and only one leader, and I found him in the classroom, and he is fearless*

   b. The fearless leader is ready for war. – *there is one and only one fearless leader (but there may be other leaders who aren’t fearless) and he is ready for war*

**RUSSIAN:**

(36) a. Наш бесстрашный капитан поднялся на борт.

   *Our fearless captain went on board.* – *there is one and only one captain, and he went on board and he is fearless*

b. Мне нравится этот бесстрашный капитан.

   *I like the fearless captain.* – *there is one and only one fearless captain and I like him*

For these cases Potts’s analysis doesn’t work. Firstly, there is no comma in English and there is no comma intonation either in Russian or English. Secondly, here AP is attached to N or N’, but not to DP, according to the surface word order. N and N’ are both of type <eₐ,tₜ>. So there would have been a type mismatch if they had combined with Potts’s <eₐ,tₜ>-type modifier. And <eₐ,tₜ> can’t shift to any type which can take <eₐ,tₜ> as an argument. Because if it had been so, the type-shifter would have had a CI type <eₐ,tₜ> as an argument and would have been of a CI type itself, which is impossible in Potts’s model (compare Potts’s argument for quantified DPs [Potts 2007:493]).

Note, that, while there isn’t comma in such DPs, it’s crucial for non-restrictive semantics of such APs that there is one and only one N entity in the Domain, e.g. one and only one captain.

Let’s suppose that such APs are always restrictive. Then consider the following semantic derivation for “usual” DPs, like in (35.b) and (36.b):

(37) || the fearless leader is happy || = happy(ιx[leader(x) & fearless(x)])

¹In (33.a) *theaters* denotes a typical entity of the set of ‘theater’. In (34.b) эти разработчики denotes a definite multiple entity of the set ‘разработчик’.
Then consider a Model, where there are more than one leader, for example, two leaders (j for John, m for Mary and b for Bill):

\[ M_1 = \langle D, I_1 \rangle, \quad D = \{j, m, b\}; \]
\[ I_1(\text{leader}) = \{j, b\}; \]
\[ I_1(\text{fearless}) = \{j\}; \]
\[ I_1(\text{happy}) = \{j, m, b\} \]

In \( M_1 \) (37) is true: there is one and only one entity (John) which is in the leader set and in the fearless set. And John is in the happy set. And the AP fearless is restrictive: \( ||\text{leader}|| = \{j, b\} \neq ||\text{fearless leader}|| = \{j\}. \)

Then consider the same interpretation of (37), but in a different Model, where there is one and only one leader (j for John, m for Mary and b for Bill):

\[ M_2 = \langle D, I_2 \rangle, \quad D = \{j, m, b\}; \]
\[ I_2(\text{leader}) = \{j\}; \]
\[ I_2(\text{fearless}) = \{j, b\}; \]
\[ I_2(\text{happy}) = \{j, m, b\} \]

In \( M_2 \) (37) is still true: there is one and only one entity (John) which is in the leader set and in the fearless set. And John is in the happy set. But the AP fearless is no longer restrictive: \( ||\text{leader}|| = \{j\} = ||\text{fearless leader}|| = \{j\}. \) Here fearless adds nothing to the semantic of the sentence, because there is one and only one leader. So we “feel” that it’s non-restrictive by “common sense”. But semantically and by the structure it’s restrictive. Here a Model can “derive” a restrictive interpretation. The speaker and the hearer share the knowledge that there’s just one and only one leader (and the leader is fearless).

4. References


[LEEDs RUS] Collection of Russian Corpora ([http://corpus.leeds.ac.uk/ruscorpora.html](http://corpus.leeds.ac.uk/ruscorpora.html))

[LEEDs ENG] Collection of English Corpora ([http://corpus.leeds.ac.uk/protected/](http://corpus.leeds.ac.uk/protected/))

These were my additions, just for your information (I mentioned them earlier, in the Rodman section). But you already have the Montague reference, and you don’t need to mention Quine.
