The wrong number: non-local adjectival modification*

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Abstract

Based on inferences they support, modifying adjectives have been divided into groups with labels such as *intersective*, *subsective*, and *privative*. Accessing noun phrase-external content, adjectives in *non-local* modification structures like *occasional sailor*, *wrong number*, or *possible candidate* (Bolinger 1967, Haïk 1985, Larson 2000) elude this classical typology. This chapter proposes a general diagnostic for non-local modification in terms of inferences that it fails to support, and applies it to a selection of known instances of non-locality. Aligned with Morzycki (2016), the chapter then argues that non-locality of modification has at least two distinct grammatical sources, one of which being syntactic intrusion of noun phrase external content into the scope of the modifier by way of ellipsis (Larson 2000). The argument is based on a review of non-local modification by *possible* and *right/wrong* (Larson 2000, Schwarz 2006), arguing that in those two cases the sources of non-locality are distinct.

Keywords: adjectives, modification, non-locality, monotonicity, intensionality, modality, ellipsis, determiners, (in)definiteness, uniqueness presupposition

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1 Introduction

Lewis (1970), Parsons (1970), and Kamp (1975) observed that adjective-plus-noun structures like *red book*, *skillful musician*, *fake gun*, or *alleged communist* are diverse in terms of their logical behaviour, that is, in terms of the types of valid inferences they support. These works established a corresponding logical typology of modifying adjectives, grouping them into classes with labels such as *intersective*, *subsective*, *privative*, and *intensional*. There is now a sizeable literature on adjectival modification (surveyed in Morzycki 2015 and McNally 2016) concerned with the lexical meanings and modes of semantic composition that underly this logical diversity.

However, the logical typology of adjectival modification established in early work is incomplete, as it does not exhaust the attested types of adjectival modification. Notwithstanding the considerable logical diversity that Lewis (1970), Parsons (1970), and Kamp (1975) identified, all the adjective-plus-noun structures they considered have a basic common trait: they describe sets of individuals (such as the set of red books, skillful musicians, fake guns, or alleged communists) that can be understood as composed from nothing but the interpretations of the adjective and the noun. In the terminology of Schwarz (2006), the modification in all of these cases is *local*. While local adjectival modification is certainly ubiquitous, the literature contains a number of case studies (recently surveyed in Morzycki 2015, 2016) about individual adjectival modifiers that can give rise to *non-local* interpretations, e.g., *possible*, *right/wrong*, *unlikely*, *unidentified*, or *occasional*.

Non-local adjectival modification is ill-understood. With the exception of Morzycki (2015, 2016), the literature on the topic is confined to isolated case studies on particular adjectival modifiers (or small families of such modifiers), without regard to the general phenomenon of non-locality. It is at present unclear, in particular, whether non-local modification should be attributed to a single underlying source, or to different independent sources.

One objective of this chapter is to demonstrate that at least two types of grammatical sources of non-locality must be distinguished. Under a proposal in Larson (2000), non-locality can be a symptom of hidden syntactic complexity that enables intrusion of noun phrase external material into the scope of the modifier. In such an analysis, the adjective meaning itself does not actually look outside its containing noun phrase. It operates on external content only in virtue of syntactic intrusion duplicating that content within the noun phrase. Larson (2000) and Leffel (2014) offer compelling support for such an intrusion analysis for modal adjectives like *possible*. On the other hand, updating findings in Schwarz (2006), this chapter shows that non-local *right* and *wrong* resist such an analysis. Their contributions to meaning go beyond what can be attributed to mere syntactic intrusion. In those cases, the adjective meaning actually looks outside the containing noun phrase. Non-local *possible* and *right/wrong*, then, instantiate two different types of non-locality.

One of the reasons why the discussion of non-local modification has largely been confined to isolated case studies might be the lack of a general diagnostic for non-locality. General characterizations of non-local modification have remained vague, employing terms such as *adverbial* or *external*, without detailing the significance of such descriptions for the modification's logical properties. A second objective of this chapter is therefore

to provide a diagnostic for non-local modification. Extending the logical classification of Lewis (1970), Parsons (1970), and Kamp (1975), tests for non-locality of adjective-plus-noun structures are formulated, identifying potential inferences whose invalidity serves as a signature of non-local modification. These tests will be applied to confirm non-locality in a selection of cases discussed in the literature (viz. *possible*, *right/wrong*, *unlikely*, *unidentified*, and *occasional*).

In the way of disclaimer, note that in its review of existing analyses of particular modifiers, this chapter focuses selectively on *possible* and *right/wrong*. For a more comprehensive review of case studies in the literature, readers are referred to Morzycki (2015, 2016).

The presentation is organized as follows. Section 2 introduces general diagnostics for non-local modification; section 3 applies those diagnostics in a survey of known instances of non-local modification; section 4 outlines the intrusion approach, as applied to *possible*; section 5 shows that this approach lacks the expressive power to capture the meaning contribution of non-local *right* and *wrong*; section 6 briefly introduces an alternative approach to *right* and *wrong*, one that lets these adjectives express the main functors in their clause; and section 7 draws conclusions.

2 Detecting non-local modification

The study of the semantics of adjectival modification naturally starts with *intersective* modification as the analytically most straightforward case (Parsons 1970, Kamp 1975). Intersective modification is exemplified by (1).

(1) Canadian embezzler

The adjective-plus-noun structure in (1) describes individuals that are both Canadian and embezzlers. In more technical terms, the extension of (1) is the intersection of the extension of the noun *embezzler*, the set of embezzlers, with the set of Canadians, contributed by the adjective *Canadian*.[1] Other uncontroversially intersective adjectives are, for example, *four-legged*, *carnivorous*, or *female*.

As a preparatory step for drawing the line between local and non-local modification in logical terms, I will identify two general properties of intersective modification, viz. *extensionality* and *upward monotonicity*, and then present cases that do not have these properties. First, intersective modification is *extensional* (Kamp 1975): for intersective adjectives, the extension of the adjective-plus-noun structure is a function of the noun's *extension*. In a possible world where the extension of *embezzler* happens to coincide with the extension of, say, *non-smoker*, the extensions of (1) and (2) are guaranteed to coincide as well. Necessarily, if the set of embezzlers is the set of non-smokers, then the set of those who are Canadians and embezzlers is the set those who are Canadians and non-smokers.

(2) Canadian non-smoker

It has long been known (Lewis 1970, Montague 1970, Kamp 1975), however, that cer-

tain adjectival modifiers are not extensional (and hence non-intersective by implication). The adjective *alleged* is a classic illustration. The extensions of (3a) and (3b), the set of individuals alleged to be embezzlers and the set of individuals alleged to be non-smokers, are not functions of the extensions of *embezzler* and *non-smoker*: there are possible worlds where the set of embezzlers coincides with the set of non-smokers while the sets of alleged embezzlers and alleged non-smokers diverge. For example, even if Liz is neither an embezzler nor a non-smoker, she may well have been been alleged to be a non-smoker without having been alleged to be an embezzler. Other clearly non-extensional (or *intensional*) adjectives are, for example, *probable* or *potential*.

(3) a. alleged embezzler
    b. alleged non-smoker

Second, intersective modification is *upward monotone*: the relation of (generalized semantic) entailment between two nominal phrases is preserved under modification by an intersective modifier.[2] For example, since embezzlement is by definition a crime, an embezzler is necessarily a criminal, hence *embezzler* can be said to entail *criminal*. This entailment is preserved under modification by *Canadian*. The fact that every embezzler is a criminal guarantees that every Canadian embezzler is a Canadian criminal, hence it guarantees that (1) entails (4).

(4) Canadian criminal

However, some adjectival modifiers are not upward monotone (and non-intersective by implication). The adjective *stereotypical* is a case in point. Notwithstanding the fact that an embezzler is necessarily a criminal, stereotypical embezzlers need not be (and presumably aren't) stereotypical criminals. Hence (5a) does not entail (5b), establishing that *stereotypical* is not upward monotone. Other modifiers that can be non-upward monotone are, for example, *leftmost* or *passionate*.

(5) a. stereotypical embezzler
    b. stereotypical criminal

Adjectival modification, then, is logically diverse, differing in terms of properties like extensionality and monotonicity. As noted in the beginning, modifying adjectives have been classified in terms of further logical properties, including so-called *subsectivity* and *privativity* (Parsons 1970, Kamp 1975), but there is no need to review those properties here, given that the arguments made below do not refer to them.

Despite the logical diversity of adjectival modification illustrated above, those cases have a very basic feature in common, a feature that so far has been tacitly taken for granted, but that is actually central in the present context: the adjective-plus-noun structure has the same type of extension as the unmodified noun, viz. a set of individuals (such as the set of Canadian, alleged, or stereotypical embezzlers), and that extension is determined solely by the meanings of the adjective and the noun. In the following, I will refer to cases of adjectival modification that share this basic feature as *local*.

I will now identify a pair of signatures of local modification that follow from this basic feature, signatures that certain modifying adjectives, viz. precisely the *non-local* ones,

will be shown not to share. These signatures refer to the properties of extensionality and upward monotonicity introduced above in the discussion of diversity within local modification.

First, while a local modifier may be intensional, the intensional context it creates cannot extend beyond the nominal expression modified. Consider the pair of sentences in (6), and imagine that the set of team members happens to coincide with the set of cigar smokers, hence that the extensions of the verb phrases *was part of the team* and *was smoking cigars* are the same. It is plain enough that in any such a possible world, (6a) and (6b) must be judged to agree in truth value.

(6) a. An alleged embezzler was part of the team.
b. An alleged embezzler was smoking cigars.

This is so despite the fact that the sentences in (6) contain the intensional modifier *alleged*. Evidently, the reason is that the intensional context created by *alleged* is restricted to the modified noun. Given locality of the modification, *alleged embezzler* composes with the indefinite article in the very same way that the unmodified noun *embezzler* would compose with it. In both cases, the noun phrase extension is a set of individuals, the set of alleged or actual embezzlers; and in both cases, semantic composition therefore yields a subject phrase that, given the semantics of the indefinite article (e.g., Heim 1991), is extensional.

Second, while a local modifier may be non-upward monotone, hence disrupt entailment between predicates, disruption of entailment is limited to the noun phrase modified. Consider the pair of sentences in (7). Since winning the contest entails participating in the contest, the verb phrase *won the context* in (7a) entails the verb phrase *participated in the context* in (7b). Likewise, sentence (7a) as a whole entails (7b) as a whole, so the entailment between verb phrases is preserved at the sentence level.

(7) a. A stereotypical embezzler won the contest.
b. A stereotypical embezzler participated in the contest.

This is so despite the fact that the sentences in (7) contain the non-upward monotone modifier *stereotypical*. The reason is again transparent. Given locality of the modification, *stereotypical embezzler* composes with the indefinite article in the same way it would compose with the unmodified noun *embezzler*. Again, in both cases the noun phrase extension is a set of individuals, the set of stereotypical embezzlers or of all embezzlers; and in both cases, composition yields a subject phrase that, again due to the lexical meaning of the indefinite article, is upward monotone (Barwise and Cooper 1981).

These signatures of local modification give rise to a pair of tests for non-locality, the *extensionality* test and the *monotonicity* test: if a modifier creates an intensional context external to the modified noun or if it disrupts entailments between external predicates, it must be classified as non-local. In section 3, I will apply these tests as diagnostics for non-locality in a selection of cases of adjectival modification discussed in the literature.

3 Some non-local modifiers

This subsection surveys a selection of adjectival modification cases discussed in the literature that qualify as non-local according to the diagnostics given above. Note that the result of either one of the two tests suffices to establish non-locality of a given non-local modifier. For purposes of illustration, however, to some of the cases below both the extensionality test and the monotonicity test are applied. Note also that the survey below is far from exhaustive. For a more comprehensive inventory of non-local modifiers, the reader is referred to Morzycki (2015, 2016).[3]

3.1 *Possible*

Larson (2000) observes that (8) has an interpretation in which it implies that Mary interviewed every candidate that it was possible for her to interview (see also Schwarz 2005, Harris 2012, Romero 2013, Leffel 2014). Employing the tests formulated above, it can be shown that in this type of reading, modification by *possible* is non-local. As Larson notes, certain other modal adjectives, including *conceivable*, seem to give rise to the same sort of interpretation, but here I will confine attention to *possible*.

(8) Mary interviewed every possible candidate. (Larson 2000)

Beginning with the extensionality test, suppose that everything that was locked was also filled (with sand, say) by the same individual, hence that the locking and filling relations coincide, ensuring that *lock* and *fill* have the same extension. In such a possible world, (9a) and (9b) are judged to necessarily agree in truth value. This is expected, given that the universal *every box* is uncontroversially extensional (Barwise and Cooper 1981).

(9) a. Sam locked every box.
b. Sam filled every box.

(10) a. Sam locked every possible box.
b. Sam filled every possible box.

However, the same is not true for (10a) and (10b) under the non-local reading of *possible*, that is, readings close in meaning to *Sam locked every lockable box* and *Sam filled every fillable box*. Still assuming that the locking and filling relations coincide, consider the following particular situation: the boxes are A, B and C; boxes A and B are lockable (they are equipped with a lock) and they are also fillable (they are free of holes); but while box C is fillable (it is hole free), it is not lockable (it lacks a lock); Sam filled and locked boxes A and B, and he neither locked nor filled box C. In this scenario, Sam locked every lockable box (viz. boxes A and B, the only boxes with locks), hence (10a) is true, but he did not fill every fillable box (having failed to fill box C despite it having no holes), hence (10b) is false. This shows that *possible* places the external predicates *locked* and *filled* in intensional contexts, establishing that modification by *possible* in this case is non-local.

Applying the monotonicity test, non-locality of *possible* can also be established on the basis of the pairs in (11) and (12). Just like *aced* entails *passed*, (11a) entails (11a). This is expected, given uncontroversial upward monotonicity of universals like *every exam* (Barwise and Cooper 1981).

(11) a. Sam aced every exam.
b. Sam passed every exam.

(12) a. Sam aced every possible exam.
b. Sam passed every possible exam.

However, (12a) does not entail (12b) in the relevant readings, that is, readings close in meaning to *Sam aced every aceable exam* and *Sam passed every passable exam*. Consider the following scenario: there are four exams; exams 1 is pass/fail, that is, no letter grade is assigned and hence the exam cannot be aced; exams 2 and 3 receive a letter grade and hence can be aced; as for exam 4, Sam is not eligible to take it in the first place, so he cannot possibly pass it; Sam failed exam 1 but aced exams 2 and 3. In this scenario, (12a) can be judged true (as Sam aced every aceable exam, viz. 2 and 3) but (12b) is false (since Sam failed to pass a passable exam, viz. 1). Hence (12a) does not entail (12b), indicating that *possible* disrupts entailments among predicates external to the modified noun phrase, establishing again non-locality of modification.

The subsections below demonstrate non-locality of other modifying adjectives discussed in the literature. Each of these demonstrations takes much the same form as the above discussion of *possible*. Each subsection applies the extensionality test and/or the monotonicity test, presenting judgments about particular scenarios as counterexamples to extensionality and/or upward monotonicity.

3.2 *Right* and *wrong*

The extensionality test and the monotonicity test can be used to establish non-locality of modification by *right* and *wrong* (Haïk 1985, Larson 2000, Schwarz 2006) in examples like those in (13). This is demonstrated here for *wrong*.

(13) a. Liz underlined the wrong number.
b. Liz underlined the right number.

Beginning with the extensionality test, consider the pairs of examples in (14) and (15). Imagine that the relations of underlining and circling coincide (i.e. anything that is underlined by a given individual is also circled by that individual), so that *underlined* and *circled* have identical extensions. The sentences in (14) are of course judged to agree in truth value in any such possible world. Given the absence of an intensional operator, this is unsurprising. After all, extensionality of the definite description *the number* is uncontroversial (e.g., Heim 1991).

(14) a. Liz underlined the number.
b. Liz circled the number.

(15) a. Liz underlined the wrong number.

b. Liz circled the wrong number.

It is remarkable, therefore, that in the same sort of possible world the sentences in (15) may well differ in truth value. Still assuming that the relations of underlining and circling coincide, consider the following particular scenario: Liz was instructed to underline the number 9 and number 9 only, and also to circle the number 7 and number 7 only; what she actually did is both underline and circle 7, without underlining or circling 9 (or anything else). In this scenario, (15a) is judged true (given that the number Liz underlined *is not* the number she was instructed to underline) while (15a) is judged false (given that the number Liz circled *is* the number she was instructed to circle). This proves *wrong* to be a non-local modifier in the example at hand.

Non-locality of modifying *wrong* can also be established on the basis of the monotonicity test. Consider the two sentence pairs in (16) and (17). Underlining in red counts as underlining, hence *underlined in red* entails *underlined*. This entailment between predicates is preserved at the sentence level in (16), with (a) entailing (b) (in a parse where *in red* modifies *underline*). This is again as it should be, given that definite description *the numbers* is uncontroversially upward monotone (Barwise and Cooper 1981).

(16) a. Liz underlined the numbers in red.
b. Liz underlined the numbers.

(17) a. Liz underlined the wrong numbers in red.
b. Liz underlined the wrong numbers.

However, the entailment between predicates is not preserved in (17), that is, (17a) does not entail (17b). Consider, for example, the following scenario: Liz has been instructed to underline the numbers 3 and 4 in black, and the numbers 7 and 9 in red, and to not underline any of the other numbers; but Liz actually reverses colours, underlining 3 and 4 in red and 7 and 9 in black (and she does not underline any other numbers). In this scenario, (17a) is judged true (as the numbers Liz underlined in red are not the ones she was supposed to underline in red) but (17b) is judged false (since despite mixing up colours, Liz underlined exactly those numbers that she was instructed to underline). Hence (17a) does not entail (17b).

The extensionality and monotonicity tests, then, establish the modification by *wrong* to be non-local. The same is true for *right*, as the reader is invited to verify by considering examples like (13b) and suitably adjusting the scenarios presented above.

3.3 *Unlikely*

Haïk's (1985) discussion of the French example in (18) suggests that there modification by *incroyable* is non-local. Abusch and Rooth's (1997) characterization of the meaning of (19) suggest that there *unexpected* is interpreted non-locally, and Morzycki (2016) identifies *unlikely* as a non-local modifier in (20). I tentatively propose that these form a natural class, focusing on *unlikely* in the following.

(18) Jean a épousé une femme incroyable.
Jean has married a woman unbelievable

Jean married a woman such that it's unbelievable (of him) that he married her. (Haïk 1985)

(19) Fabienne put the money in an unexpected place. (Abusch and Rooth 1997)

(20) An unlikely chiropractor discovered the solution. (Morzycki 2016)

Beginning with the extensionality test, imagine that the same individuals passed the exam and complained to the chair, so that the verb phrases *passed the exam* and *complained to the chair* have the same extension. Under this assumption, (21a) and (21b) are judged to agree in truth value. This is expected, given uncontroversial extensionality of existential indefinites like *a student*.

(21) a. A student passed the exam.
b. A student complained to the chair.

(22) a. An unlikely student passed the exam.
b. An unlikely student complained to the chair.

Yet, under the same assumption, (22a) and (22b) in the relevant readings can differ in truth value. In these readings, what is portrayed as unlikely or unexpected is not the fact that the individual in question is a student but rather the fact that the individual passed the exam or complained to the chair. Still assuming that the same individuals passed the exam and complained to the chair, take the following specific scenario: Liz is a weak student, in fact the only student expected to fail the exam; unexpectedly, she passed it anyway; Liz is also known to be a complainer and quite expectedly launched a complaint to the chair. In this scenario, (22a) is judged true (given that Liz's passing the exam was unexpected) but (22b) is judged false (given that Liz's complaining to the chair was predictable). Hence *unlikely* turns the verb phrases *passed the exam* and *complained to the chair* into intensional contexts, establishing that modification by *unlikely* in this case is non-local.

The monotonicity test too indicates that modification by *unlikely* can be non-local. Just like *aced* entails *passed*, (23a) entails (23b). This is expected, given uncontroversial upward monotonicity of indefinites like *a student*.

(23) a. A student aced the exam.
b. A student passed the exam.

(24) a. An unlikely student aced the exam.
b. An unlikely student passed the exam.

However, (24a) in the relevant reading does not entail (24b). This is shown by the following scenario: the students are Al, Beth, and Chris; Al is the only strong student, hence the only one expected to have a reasonable chance of acing the exam; Beth is an average student, expected to pass but not ace the exam; Chris is expected to fail; in actuality, both Al and Beth aced the exam, while Chris expectedly failed. In this scenario, (24a) is judged true (given Beth's unexpected acing of the exam) but (24b) is judged false (given that Chris' failing was expected). So, *unlikely* in this case disrupts entailments among the verb phrases external to the modified noun phrase, again establishing non-locality

of modification.

3.4 *Unidentified*

Abusch and Rooth (1997) discuss the semantic peculiarity of a class of so-called epistemic adjectival modifiers, such as *unidentified* in (25). This class also includes, for example, *unknown* and *undisclosed*.

(25) Solange is staying in an unidentified hotel. (Abusch and Rooth 1997)

Epistemic modifiers can be shown to be non-local with reference to the extensionality test. If the same individuals complained to the dean and got the job, then, (26a) and (26b) are judged to agree in truth value. This is expected, given extensionality of existential indefinites like *a committee member*.

(26) a. A committee member complained to the dean.
b. A committee member got the job.

(27) a. An unidentified committee member complained to the dean.
b. An unidentified committee member got the job.

However, (27a) and (27b) may differ in truth value. Still assuming that the same individuals complained to the dean and got the job, consider the following particular scenario: in actuality, Smith is the lone committee member who complained to the dean and he also got the job; an internal memo reports that the dean received a complaint from a committee member, but the memo does not disclose that member's identity; the same document reveals that the committee member who got the job is Smith. As a report on the memo's content, (27a) is judged true (given that the memo does not identify Smith as the complainer) but (27b) is judged false (given that the memo states that Smith got the job). Apparently, then, *unidentified* creates an intensional context in the position of the verb phrases external to the modified noun, establishing non-locality of the modification.

3.5 *Occasional*

Bolinger (1967) drew attention to the apparent adverbial interpretation of so-called infrequency adjectives, such as *infrequent*, *rare*, or *occasional*. Sentence (28), for example, can receive the paraphrase *Occasionally, a sailor on leave swaggered by*, suggesting that in this reading the adjective in (28) does not form a semantically interpreted constituent with the noun (e.g. Bolinger 1967; Stump 1981; Larson 1999; Zimmermann 2003; Gehrke and McNally 2011), at least not one that has a set of individuals as its extension.

(28) The occasional sailor on leave swaggered by. (Stump 1981)

Non-locality of *occasional* in this type of reading can be established using the monotonicity test. Consider the pairs of sentences in (29) and (30). Given that a sombrero is a hat, *walked in wearing a sombrero* entails *walked in wearing a hat*. Unsurprisingly, given upward monotonicity of definites like *the guest*, this entailment is preserved at the sentence

level in (29), as (29a) entails (29b).

(29) a. The guest walked in wearing a sombrero.
b. The guest walked in wearing a hat.

(30) a. The occasional guest walked in wearing a sombrero.
b. The occasional guest walked in wearing a hat.

And yet (30a) does not entail (30b). For example, (30a) could be true in virtue of exactly 10 of the 100 party guests walking in, in regular intervals, wearing a sombrero. But such a scenario does not guarantee the truth of (30b), which would not be judged true if, say, each of the 100 guests walked in wearing a hat, be it a sombrero or some other type of hat. Hence modification by *occasional* in such cases is non-local.

4 Non-locality by syntactic intrusion

Larson (2000) pioneered an approach under which non-locality is a symptom of hidden syntactic complexity. Non-locality is attributed to external content syntactically intruding into the adjective-plus-noun structure via a process of anaphora. In this analysis, the adjective operates on noun phrase external content only in virtue of syntactic intrusion duplicating that content within the noun phrase. Larson introduces the approach primarily as analysis of non-local *possible* (see section 3.1.) but also considers its application to other adjectives, including *right* and *wrong* (see section 3.2). The introduction of the approach in this section confines attention to *possible*.

Larson identifies the anaphoric intrusion process in non-local modification with so-called null complement anaphora (Hankamer and Sag 1976). Null complement anaphora allows for an understood clausal complement of an embedding predicate to remain unpronounced. This is illustrated in (31), where A's statement provides the content of the understood clausal complement of *surprised* in B's reply.

(31) A: John is telling lies again.
B: I'm surprised.
(Grimshaw 1979)

As illustrated in (32), *possible* can embed an infinitival complement clause. Larson assumes that the infinitival complement of *possible* is subject to null complement anaphora, an assumption bolstered by examples like (33).

(32) It is possible for Mary to talk to the candidate.

(33) A: Is it possible for Mary to talk to the candidate?
B: Yes, it is possible.

So Larson proposes to parse non-local *possible* in modification structures as embedding an infinitival complement clause that has undergone null complement anaphora.

Larson analyzes null complement anaphora in terms of phonetic deletion, much like verb phrases ellipsis is analyzed in a common approach (e.g., Tancredi 1992). Example

(8), repeated here as (34), is accordingly assigned a logical form like (35), where the strike-out marks syntactic structure rendered silent by deletion.

(34) Mary interviewed every possible candidate. (Larson 2000)

(35) every [[wh $\lambda 2$[possible ~~for M. to interview $_2$~~]] candidate] $\lambda 1$[M. interviewed t_1]

Larson assumes that deletion in null complement anaphora must be licensed by a matching antecedent clause. In (35), the matching antecedent *Mary to interview* t_1 is not a surface constituent, but is assumed to be created by covert movement of quantificational object in which *possible* is included. As Larson notes, this is parallel to the familiar case of *antecedent contained* verb phrase ellipsis on the classic analysis originating in Sag (1976). According to (35), the trace in the silent clausal complement of *possible* is bound by an (equally silent) relative pronoun *wh*. On this analysis, then, non-local *possible* is the sole overt remnant of an otherwise silent relative clause.

Assuming that null complement anaphora is always optional, this analysis predicts that cases with non-local *possible* alternate with counterparts where the infinitival complement, and hence the containing relative clause, remains overt. It is moreover predicted that these non-elliptical counterparts are judged semantically equivalent to the corresponding non-local modification examples. As Larson observes, both of these predictions are correct. Sentence (36), where *possible* takes an overt infinitival complement, is judged to be acceptable and to be equivalent to (34).[4]

(36) Mary interviewed every candidate (that it was) possible for her to interview.

The intrusion analysis correctly predicts the outcomes of the extensionality and monotonicity tests reported in section 3.1. Recall that in (10), repeated below as (37), (a) and (b) need not agree in truth value even if the extensions of *locked* and *filled* coincide, and that in (12), repeated as (38), (a) fails to entail (b) despite the fact that *aced* entails *passed*.

(37) a. Sam locked every possible box.
b. Sam filled every possible box.

(38) a. Sam aced every possible exam.
b. Sam passed every possible exam.

These findings follow immediately from the observation that the corresponding test results obtain for the non-elliptical paraphrases determined by the analysis. As the reader is invited to verify, the same scenarios presented for (37) and (38) in section 3.1 establish that in (39), (a) and (b) can differ in truth value even if the extensions of *locked* and *filled* coincide, and that in (40), (a) fails to entail (b).

(39) a. Sam locked every box possible for him to lock.
b. Sam filled every box possible for him to fill.

(40) a. Sam aced every exam possible for him to ace.
b. Sam passed every exam possible for him to pass.

This analysis of non-locality with *possible* has the virtue of theoretical parsimony. It

does not require any innovations regarding the grammar of adjectival modification, be it lexical adjective meaning, syntactic structure, or semantic composition. The individual ingredients posited, viz. null complement anaphora and relative clauses, are familiar and independently motivated, the novelty residing merely in the way they are proposed to conspire in the modification context.

There are, furthermore, intriguing hints in support of the particular syntactic structure proposed by Larson, specifically, the assumption that non-local *possible* takes a (covert) infinitival complement clause. If non-locality is due to syntactic intrusion of an infinitival complement clause, then adjectives that do not permit infinitival complements should not participate in non-local readings. Larson suggests that this prediction is borne out. For example, as shown by the unacceptability of (41), the modal adjective *probable* does not embed infinitival clauses; correspondingly Larson observes that cases like (42) do not permit a non-local interpretation.

(41) *It is probable (for Mary) to talk to that candidate.

(42) Mary interviewed every probable candidate.

Leffel (2014) identifies a further notable prediction of Larson's analysis, concerning the modal flavour of the meaning that *possible* expresses. Leffel reports that when embedding an infinitival clause like *for Mary to retire*, the interpretation of *possible* can be deontic or circumstantial but not epistemic, while *possible* embedding a finite clause can be epistemic but not deontic or circumstantial. Sentence (43a) can be read as conveying that Mary's retirement is possible in view of the relevant regulations or circumstances (deontic/circumstantial), but not as conveying that the relevant evidence is consistent with Mary retiring (epistemic); in contrast, (43b) can convey that the evidence is consistent with Mary retiring (epistemic), but not as conveying that Mary's retirement is possible in view of the regulations or circumstances (deontic/circumstantial).

(43) a. It is possible for Mary to retire.
b. It is possible that Mary will retire.

Under Larson's intrusion analysis this leads to the prediction that non-local *possible* can be read as deontic or circumstantial but not as epistemic. Leffel reports that this prediction is correct. For example, Larson's example (34) can be understood as being about candidates' interviews in possible worlds permitted by regulations or circumstances, but not about interviews in worlds compatible with the relevant evidence available.

In sum, the intrusion analysis put forward in Larson (2000) is both theoretically parsimonious and well-supported empirically. Not only does it capture the non-locality of *possible*, as diagnosed by the extensionality and monotonicity tests, but it makes further correct predictions, about the perceived equivalence of cases with non-local *possible* and their counterparts with an overt relative clause, about the family of modal adjectives that participate in non-local interpretations, and about the modal flavour attested in the relevant readings. There are good reasons, then, to endorse the intrusion approach as an analysis of non-local *possible*.[5]

This conclusion invites the stronger working hypothesis that syntactic intrusion is the source of non-locality in adjectival modification in general. Larson indeed speculates

that the approach might generalize to certain other cases of non-local modification. One of those cases is non-local *right* and *wrong* (see section 3.2). The purpose of the next section, however, is to show that such a generalization cannot succeed, since the meaning contribution of non-local *right* and *wrong* cannot be captured in terms of mere syntactic intrusion.

5 The insufficiency of syntactic intrusion

The extension of the intrusion analysis to non-local *right* and *wrong* entertained by Larson (2000) is backed up by the observation that these adjectives share the requisite combinatorial properties with *possible*. Example (44) shows that *right* and *wrong* can embed an infinitival clause, and (45) suggests that this clause is subject to null complement anaphora.

(44) It is wrong/right for Liz to talk to that person.

(45) A: Is it wrong/right for Liz to talk to that person?
B: No, it's not wrong/right.

This suggests that the sentences in (46), which repeats (13), can be assigned the logical forms in (47), which are isomorphic to the logical form with non-local *possible* in (35) above.

(46) a. Liz underlined the wrong number.
b. Liz underlined the right number.

(47) a. the [[wh $\lambda 2$[wrong ~~for Liz to underline t_2~~]] number] $\lambda 1$[Liz underlined t_1]
b. the [[wh $\lambda 2$[right ~~for Liz to underline t_2~~]] number] $\lambda 1$[Liz underlined t_1]

Wrong has a modal meaning close to the meaning of necessity modals like *not allowed* or *not supposed*. As the antonym of *wrong*, *right* should accordingly have a modal meaning close to that of *required* or *supposed*. Given the logical forms in (47), the examples in (46) are therefore predicted to have the paraphrases in (48), the sort of paraphrases Larson (2000) indeed suggests.

(48) a. Liz underlined the number that she was not supposed to underline.
b. Liz underlined the number that she was supposed to underline.

Parallel to what was said about *possible* in section 4, this analysis correctly predicts the outcomes of the extensionality and monotonicity tests reported in section 3.2. Recall that in (15), repeated below as (49), (a) and (b) need not agree in truth value even if the extensions of *underlined* and *circled* coincide, and that in (17), repeated as (50), (a) fails to entail (b) despite the fact that *underlined in red* entails *underlined*.

(49) a. Liz underlined the wrong number.
b. Liz circled the wrong number.

(50) a. Liz underlined the wrong numbers in red.

b. Liz underlined the wrong numbers.

These outcomes follow immediately from the observation that the corresponding test results obtain for the non-elliptical paraphrases determined by the analysis. As the reader is invited to verify, the same scenarios presented for (15) and (17) in section 3.2 establish that in (51), (a) and (b) can differ in truth value even if the extensions of *underlined* and *circled* coincide, and that in (52), (a) fails to entail (b).

(51) a. Liz underlined the the number that she was not supposed to underline.
b. Liz circled the number that she was not supposed to circle.

(52) a. Liz underlined the numbers in red that she was not supposed to underline in red.
b. Liz underlined the numbers that she was not supposed to underline.

These observations carry over to *right*, as the reader is also invited to confirm. The intrusion analysis of *right* and *wrong*, then, meets basic descriptive demands on a theory of non-local modification by these adjectives.

Despite this promising initial result, however, it can be shown that the actual meaning contributions of *right* and *wrong* are not in fact those predicted under the assumptions above, and that, moreover, the actual meaning contributions are beyond the expressive power of a syntactic intrusion account.

To make this argument, the sentences in (46) will be judged in a sequence of scenarios. Each of these scenarios establishes a two-way partition of a given set of relevant numbers into the *required set*, comprised of the numbers that Liz is required to underline, and the *excluded set*, the set of numbers that Liz is not permitted to underline. Each scenario moreover fixes an *actual set*, the set of numbers that Liz actually underlined (and hence also its complement, the set of numbers that Liz did not actually underline). The scenarios will be presented in a convenient notation, illustrated in (53).

(53) $\underline{7}\ \ 9 \mid 7\ \ \underline{9}$

To the left of the vertical line in such a representation, underlining marks the members of the required set, and so the absence of underlining marks the members of the excluded set; to the right of the vertical line, underlining marks the members of the actual set. So (53) depicts a situation where the relevant numbers are 7 and 9, and where Liz was supposed to underline only 7 but instead underlined only 9.

Consistent with the judgments already reported in section 3.2, the *wrong* example (46a) is clearly judged true in scenario (53). This judgment is correctly accounted for under the intrusion analysis since the predicted paraphrase (48a) is likewise judged true there. Intuitions about (46a) and (48a) also match relative to the scenario in (54) below, where both sentences are clearly judged false. Turning to *right*, both (46b) and (48b) are judged false in (53) and true in (54). Intuitions about the examples in (46) in these scenarios are therefore as predicted under the intrusion analysis.

(54) $\underline{7}\ \ 9 \mid \underline{7}\ \ 9$

However, these findings consistent with the intrusion analysis of non-local *right* and

wrong do not generalize. To begin with the *wrong* sentence (46a), consider the scenario depicted in (55), which differs from (53) in that the excluded set has more than one member. There are now two numbers that Liz was not supposed to underline, and she underlined one of those two (and no other number).

(55) 4 7 9 | 4 7 9

Assuming that the definite article triggers a uniqueness presupposition, as under the classic Fregean analysis (see, e.g., Heim 1991), the logical form (47a) carries a presupposition that is false in scenario (55), due to the excluded set having two members. Indeed the *wrong* paraphrase (48a) is judged infelicitous in (55). On the intrusion analysis, therefore, sentence (46a) itself, too, is predicted to be judged infelicitous in (55). But that prediction is clearly false. In (55), just like in (53), sentence (46a) is perceived to be felicitous and true.

Uniqueness of the excluded set, then, is clearly not a necessary condition on the felicity and truth of (46a). The meaning that the unembellished intrusion analysis delivers for non-local *wrong* is therefore too strong. Based on similar observations, Abbott (2001) suggested that *the wrong* phrases are actually "false definites", in the sense that they are for some reason interpreted like indefinites, and hence do not contribute uniqueness implications. Following Abbott, the intrusion analysis could conceivably be amended by considering *the* in the context of non-local *right* or *wrong* to be the surface realization of a semantically interpreted indefinite article. This leads from the logical forms and paraphrases in (47) and (48) to those in (56) and (57), where *a* replaces *the* across the board.

(56) a. a [[wh $\lambda 2$[wrong ~~for Liz to underline t_2~~]] number] $\lambda 1$[Liz underlined t_1]
b. a [[wh $\lambda 2$[right ~~for Liz to underline t_2~~]] number] $\lambda 1$[Liz underlined t_1]

(57) a. Liz underlined a number that she was not supposed to underline.
b. Liz underlined a number that she was supposed to underline.

This amendment would render the judgments on (46a) in scenario (55) consistent with the intrusion analysis. Under the classic Russellian analysis of the indefinite article as an existential (see, e.g., Heim 1991) the logical form (56a) is predicted to be true. Indeed, just like (46a), the paraphrase (57a) is judged felicitous and true in scenario (55).

A challenge to this line of attack, anticipated in Abbott (2001), is that *right* and *wrong* are not on a par in the relevant respect. Scenario (58) presents the flip side of (54), determining a required set that has more than one member.

(58) 4 7 9 | 4 7 9

Parallel to its prediction about the *wrong* sentence (46a), the unembellished intrusion analysis predicts the *right* sentence (46b) to be infelicitous in (58). That prediction turns out to be correct. Just like the definite paraphrase (48b), and unlike the indefinite paraphrase (57b), (46b) is indeed judged infelicitous in situation (58).

So, even though the *wrong* sentence (46a) does not carry a uniqueness presupposition about the excluded set, the *right* sentence (46b) does carry a uniqueness presupposition

about the required set. Accordingly, fake definiteness would need to be selectively available for non-local *wrong*, but not for non-local *right*. The unanswered question is why the antonyms *right* and *wrong* should differ in this way.

In the absence of a credible answer, a more promising approach to the observations reported above might capitalize on an independently motivated proposal about antonym pairs under which the negative member is syntactically decomposed into negation and the positive member (Büring 2007a,b, Heim 2008). On this proposal, *wrong* is syntactically decomposed into *not* and *right*. As desired, this does not alter the initial predictions about non-local *right*, given by the logical form (47b) and paraphrase (48b), repeated below in (59b) and (60b). However, in the analysis of *wrong*, the logical form (47a) and paraphrase (48a) could now be replaced with (59a) and (60a), where negation takes widest scope, outside the restrictor of *the*.

(59) a. not the [[wh $\lambda 2$[right ~~for L. to underline t_2~~]] number] $\lambda 1$[Liz underlined t_1]
b. the [[wh $\lambda 2$[right ~~for Liz to underline t_2~~]] number] $\lambda 1$[Liz underlined t_1]

(60) a. Liz did not underline the number that she was supposed to underline.
b. Liz underlined the number that she was supposed to underline.

With negation moved out of the way, the restrictor of *the* in (59a) picks out the required set rather than the excluded set. As intended, a uniqueness presupposition about the excluded set is no longer derived, allowing for the attested felicity and truth of (46a) in scenario (55).

Of course, assuming that the wide scope of negation seen in (59a) is obligatory, this proposal also makes a new prediction. Supposing that negation is a hole for presuppositions in the sense of Karttunen (1973), and still assuming a Fregean semantics for definites, (46a) is now expected to carry a uniqueness presupposition about the required set, a presupposition that is indeed attested in the paraphrase (60a). Remarkably, that prediction turns out to be correct. In scenario (61a), the required set is empty. Like the proposed paraphrase (60a), the *wrong* sentence (46a) is clearly not felicitous in (61a). Intuitions moreover suggest that this infelicity is due to the emptiness of the required set. In scenario (61b), the required set has more than one member. Again, just like (60a), (46a) is not fully felicitous in (61b), with intuitions pointing to the non-uniqueness of the required set as the source of the infelicity.

(61) a. 4 7 9 | 4 7 9
b. 4 7 9 | 4 7 9

The interim summary, then, is that *wrong* does not contribute a definiteness presupposition (of existence and uniqueness) about the excluded set, that both *right* and *wrong* contribute a definiteness presupposition about the required set, and that, assuming syntactic decomposition of *wrong*, these findings are consistent with an intrusion analysis.

However, notwithstanding its merits identified above, the new logical form in (59a) suffers from a blatant shortcoming. In virtue of negation taking widest scope, the meaning it encodes is clearly too weak. The *wrong* sentence (46a), just like its counterpart with *right* in (46b), unquestionably implies that there is a number that Liz underlined, i.e. that

the actual set is not empty. The logical form in (59a) fails to capture this existence implication. Correspondingly, the purported paraphrase in (60a) could easily be judged true in a scenario where Liz did not underline anything.

For both (46a) and (46b) the existence implication about the actual set seems to have the status of a presupposition. This is suggested, for example, by its projection from the question *Did Liz underline the right/wrong number?*, which also seems to imply that there is a number that Liz underlined. Furthermore, (46a) and (46b) in addition contribute uniqueness presuppositions about the actual set. In the scenarios in (62) below, the actual set has more than one member, and either coincides with the excluded set, as in (62a), or overlaps with the required set, as in (62b). The *wrong* sentence (46a) is judged infelicitous in (62a), with intuitions indicating that this infelicity is due to the non-uniqueness of the actual set in (62a). Likewise, the *right* sentence (46b) is not fully felicitous in (62b), and once again, intuitions point to the non-uniqueness of the actual set as the source of the infelicity.

(62) a. 4 7 9 | 4 7 9
b. 4 7 9 | 4 7 9

The conclusion is, then, that non-local readings with *right* and *wrong* carry two definiteness presuppositions, presuppositions of existence and uniqueness about both the required set and the actual set. Non-local *right* affirms, and non-local *wrong* denies, identity of the unique member of the actual set and the unique member of the required set. For (46a) and (46b), this leads to the final revised paraphrases (63a) and (63b), respectively.[6]

(63) a. The number that Liz underlined is not the number she was supposed to underline.
b. The number that Liz underlined is the number she was supposed to underline.

Since these paraphrases represent the final proposal in this chapter regarding the interpretation of sentences with non-local *right* and *wrong*, it is important to observe first that, just like the unembellished intrusion analysis considered at the outset, this proposal captures the results of the extension and monotonicity tests. The demonstration is left to the reader.

The crucial observation is now that the meanings given by the paraphrases in (63) are beyond the reach of a syntactic intrusion analysis. No further credible modifications of the logical forms in (59) are in sight that would have the desired effect of adding a definiteness presupposition about the actual set. While syntactic intrusion could be responsible for *the* contributing a presupposition about the excluded set or the required set, it fails to make accessible to *the* the actual set to trigger a presupposition about. The actual set is given by the nuclear scope of the definite article but cannot be given by the restrictor, where the relevant predicate is embedded under *right*/*wrong*. Moreover, a single occurrence of the definite article surely cannot be credited for presuppositions about two different sets, which is precisely what the interpretations given by the paraphrases in (63) would require. In short, an intrusion analysis lacks the expressive power

to capture the attested meaning contributions of non-local *right* and *wrong*.[7]

6 The main functor approach

The above discussion of non-local modification with *possible* and *right/wrong* establishes that those two cases have different analyses. More specifically, in virtue of excluding syntactic intrusion as the source of non-locality with *right* and *wrong*, the findings above suggests that in those cases, the adjective semantics actually looks outside the containing noun phrase, without relying on syntax duplicating that content noun phrase internally. This section briefly explores this approach to non-local *right* and *wrong*, although with no conclusive outcome.

In a semantic framework that reconstructs semantic composition as functional application and that does not impose constraints on the complexity of semantic types (e.g., Heim and Kratzer 1998), devising meanings for *right* and *wrong* that overcome the expressive limitation of the intrusion analysis is actually straightforward. Focusing on *wrong* for illustration, suppose example (46a), repeated again in (64), has the garden-variety logical form in (65).

(64) Liz underlined the wrong number.

(65) [the [wrong number]] $\lambda 2$ [Liz underlined t_2]

Under a conceivable hypothesis about the compositional structure of (65), the main functor is not given by the definite article or the derived predicate formed by covert movement of the definite description, but by the adjective *wrong*. The proposition expressed by (65) is accordingly obtained by the sequence of functional applications in (66).

(66) $[\![\,\text{wrong}\,]\!]([\![\,\text{number}\,]\!])([\![\,\text{the}\,]\!])(\|\,\lambda 2\ [\text{Liz underlined } t_2]\,\|)$

Here $[\![\,.\,]\!]$ and $\|\,.\,\|$ are taken to map object language expressions to their extension and intension, respectively. Note that reference to the intension of the main clause content is made necessary by the fact that *wrong* is a modal expression that operates on this content. This is apparent from the intended paraphrase of (64) in (63a), repeated here as (67), and confirmed by the outcome of the extensionality test reported in section 3.2.

(67) The number that Liz underlined is not the number she was supposed to underline.

The meaning given by the paraphrase (67) can be obtained as the compositionally derived interpretation of (65) by assigning to *wrong* the lexical meaning in (68). Here P is a set of individuals, D is a function of the same type as the function expressed by the definite article, $^{\Box}$Q is the set of individuals who are supposed to have the property Q, and $^{\vee}$Q is the set of individuals who actually have that property.

(68) $[\![\,\text{wrong}\,]\!](P)(D)(Q) \Leftrightarrow D(P \cap {}^{\vee}Q) \neq D(P \cap {}^{\Box}Q)$

According to (68), again assuming a Fregean semantics of the definite article, (65) denies

the equality of the unique number that Liz underlined and the unique number that she was supposed to underline, matching the intended paraphrase (67).

This analysis may capture the meaning contribution of non-local *wrong*, but it is conceptually unattractive. There do not appear to be compelling independent reasons for positing lexical meanings that operate on determiner meanings. By assuming that *wrong* semantically operates on the accompanying determiner, the analysis therefore forces an extension of the inventory of semantic types that are realized in lexical meanings, introducing a potential new obstacle to the development of a constrained theory of lexical meaning (e.g., Matthewson and von Fintel 2008).

In a version of the main functor approach that is more appealing in this regard, *wrong* does not operate on the determiner meaning, but merely relates two sets or properties, just like quantificational determiners are classically assumed to do (Barwise and Cooper 1981). Such a lexical meaning for *wrong* is stated in (69), where IOTA is the Fregean meaning of the definite article, construed as a function that maps a singleton set of individuals to its sole member.

(69) $[\![\,\text{wrong}\,]\!](P)(Q) \Leftrightarrow \text{IOTA}(P \cap {}^{\vee}Q) \neq \text{IOTA}(P \cap {}^{\square}Q)$

Inspired by Abbott's (2001) suggestion that the definite article does not receive its usual interpretation when combining with *wrong* (see section 5), suppose temporarily that *the* in (65) is semantically vacuous, and hence will effectively be skipped in semantic composition. It is apparent that the lexical entry in (69) will then have the desired effect. The interpretation of (65) will compose as in (70), again deriving the target interpretation given by the paraphrase in (67).

(70) $[\![\,\text{wrong}\,]\!]([\![\,\text{number}\,]\!])(\|\,\lambda 2\ [\text{Liz underlined } t_2]\,\|)$

Of course, simply stipulating semantic vacuity of the definite article in non-local *the wrong* (and *the right*) would introduce its own theoretical cost. However, this stipulation is eliminated under an interesting proposal in Morzycki (2016). Morzycki proposes that at logical form, non-local modifiers like *wrong* extract from the containing determiner phrase as shown in (71).

(71) [wrong number] $\lambda 1$ [[the $\{t_1\}$] $\lambda 2$ [Liz underlined t_2]]

This movement is assumed to leave behind an individual-denoting trace, here t_1. To ensure interpretability of the resulting structure, Morzycki assumes that the denotation of this trace undergoes a type shift in the sense of Partee (1987), viz. the shift IDENT, which maps any individual to the singleton set containing it. In the logical form (71), enclosure between curly brackets encodes this type shift syntactically. Under its Fregean meaning, *the* can be construed as denoting IOTA, the inverse of IDENT. The semantic effects of the type shift and the definite article then neutralize, rendering *the* $\{t_1\}$ semantically equivalent to t_1, and hence rendering the logical form (71) equivalent to (72) below. Under the lexical entry in (69), (71) therefore captures the intended interpretation without stipulating semantic vacuity of the determiner, effectively deriving vacuity at no cost from the compositional interpretation.

(72) [wrong number] $\lambda 2$ [Liz underlined t_2]

As Morzycki notes, this proposal makes the interesting prediction that non-local modifiers like *wrong* do not appear with the quantificational determiner *every*. *Every* cannot felicitously combine with overt restrictors whose extensions necessarily are (at most) singletons, as illustrated by *#every positive square root of 4* or *#every highest mountain in Canada*. Hence the structure *every* $\{t_1\}$ should not be felicitous, either, excluding the requisite logical form for a non-local interpretation. Confirming judgments reported in Larson (2000), Morzycki notes that the prediction is indeed borne out. This is illustrated by the minimal pair in (73), where (a) allows for a non-local reading while (b) is unacceptable.

(73) a. Peter saw the wrong man.
b. *Peter saw every wrong man.
(Larson 2000)

This contrast invites one to more fully investigate the compatibility of non-local *wrong* (and *right*) with different determiners. The indefinite article *a* is of particular interest in this regard. The indefinite article shares the property of *every* identified above. As discussed in Heim (1991), *a* too is infelicitous with restrictors whose extensions necessarily are (at most) singletons, as illustrated by *#a positive square root of 4* or *#a highest mountain in Canada*. Hence the structure *a* $\{t_1\}$ should also be infelicitous, again excluding the logical form for a non-local interpretation.[8]

(74) *Peter saw a wrong man. (Larson 2000)

Larson (2000) indeed judges the example in (74) to be unacceptable. However, Morzycki reports that examples with *a* much like (74) are acceptable and allow for non-local readings, but that those readings differ in meaning from their counterparts with *the*. Aligned with Morzycki's assessment, (75) to seems to be acceptable and to allow for a non-local reading entailing that Liz underlined a number that she should not have underlined, yet without being synonymous with (64).

(75) Liz underlined a wrong number.

Specifically, consider a scenario like (62b) in section 5, where in addition to a number that she was not supposed to underline, Liz also underlined the sole number that she was supposed to underline. As reported in section 5, the definite example (64) seems infelicitous in such a scenario. In contrast, the indefinite case (75) appears to be judged felicitous and true.

Future work will need to investigate the consequences of data like (74) and (75) for the analysis of *right* and *wrong*. As matters stand, the precise interaction of non-local *wrong* with the preceding article is unclear. It remains to be elucidated, in particular, why *wrong* can combine with the indefinite article to begin with, how to precisely characterize the resulting non-local interpretation, and why the definiteness contrast correlates with the observed difference in meaning.

In sum, given the result in section 5 that non-locality of *right* and *wrong* cannot be

a symptom of mere syntactic intrusion, a main functor approach suggests itself as the obvious analytical option. An important challenge for such a main functor analysis that is waiting to be met is the interaction between non-local of *right* and *wrong* and the determiner they combine with.

7 Conclusion

A prominent question in the literature on adjectival modification concerns the relation between the intuited logical behaviour of an adjective and grammatical structure or lexical semantics. The established view, articulated particularly clearly in Larson (1998), is that the same logical properties of modification can arise from very different grammatical or lexical ingredients. While that argument was made about local modification, this chapter has argued for the same conclusion in the domain of non-local modification.

Building on Larson (2000) and Schwarz (2006), the argument was based on case studies about non-local *possible* and *right/wrong*. Its empirical focus was on the attested meaning contributions of *right* and *wrong*, concluding that these contributions cannot be attributed to the same source as non-locality with *possible*.

That result fits with the observation that *possible* and *right/wrong* combine with different types of determines. As seen, for example, *possible*, but not *right/wrong*, allows for a non-local reading when combining with the universal determiner *every*. Aligned with the main conclusion of this chapter, Morzycki (2016) posits different classes of non-local modification based on the compatibility with different determiners, using this criterion to assign *possible* and *right/wrong* to different groups.

The many issues left open in the arguments made here most obviously include the analysis of non-local modifiers other than non-local *possible* and *right/wrong*. Morzycki (2016) suggests that the two types of non-local modifiers exemplified by *possible* and *right/wrong* exhaust the typology of non-local modification, effectively proposing that that all non-local modification is either due to syntactic intrusion or to the modifier being the main functor in its clause. The findings reported in this chapter are consistent with this proposal.

See also:

Chapter *Systematic polysemy*; Chapter *Varieties of definites*; Chapter *Ellipsis*; Chapter *Gradable adjectives and degree expressions*; Chapter *Semantic Parameters and Universals*; Chapter; Chapter *Type shifting – the Partee triangle*

Notes

[1]The extension of a predicate like *embezzler* might actually be construed as the characteristic function of a set of individuals, rather than the set itself. Note also that no claim is made here about type of the extension of the modifier *Canadian*, which might be considered a set of individuals as well, or alternatively a function from sets of individuals to sets of individuals. See, for example, Heim and Kratzer (1998) and Morzycki (2015) for discussion and references.

[2]Monotonicity properties are not usually discussed in the particular context of adjectival modification, although intuitions on monotonicity inferences have been taken to furnish important desiderata for semantic analyses of particular lexical items or constructions (e.g., Stalnaker 1968, Barwise and Cooper 1981, Heim 1992).

[3]A common feature of the adjectives surveyed below (noted in the relevant literature) is that they all allow for local interpretations in addition to the non-local readings. For example, Larson (2000) observes that apart from permitting the non-local reading discussed below, *possible candidate* can be read as describing the set of those who qualify as possible candidates, much like, say, *alleged embezzler* describes a set of individuals alleged to be embezzlers. Although not discussed in the literature, the fact that many non-local modifiers also have local uses might well be an important clue to the nature and origin of non-locality.

[4]In order to account for the word order in (34), Larson posits a process of adjective promotion, which shifts *possible* from the postnominal position seen in (36) to the prenominal position seen in (34).

[5]This assessment holds irrespective of certain details regarding the interpretation of the relative clause posited under the intrusion analysis. The relative clause hosting *possible* might be considered a restrictive relative clause as analyzed under a classic view that goes back at least to Quine (1960): both the relative clause and the modified noun describe sets of individuals, whose intersection serves as the semantic value of the modification structure as a whole. This analysis, suggested by the exposition above, would render the semantic composition of the adjective-plus-noun structure straightforward. (The modification in (34) and (36) would be no different from the local intersective case *Canadian embezzler* discussed in section 2.) However, Schwarz (2005) and Romero (2013) present evidence that at least in some cases (viz. cases with non-local *possible* in superlatives), the relative clauses hosting non-local *possible* cannot be so analyzed. They argue instead that the clauses in question are *amount relatives* in the sense of Carlson (1977). Leffel (2014) goes further, proposing that in all instances of non-local *possible*, the containing relative clause is an amount relative. These details, though of considerable intrinsic interest, are not central in the context of the present discussion, given that the arguments made above do not refer to them.

[6]For *right*, the adequacy of (63b) as a paraphrase for (46b), and specifically the purported uniqueness presupposition about the actual set, requires further scrutiny. As Aron Hirsch (p.c.) reports, it seems possible to extend (46b) into a felicitous description of scenario (62b) like *Liz underlined the right number, but in addition she also underlined a number that she wasn't supposed to*, while no parallel manipulation restores the felicity of (63b) in the same scenario. This descriptive complication is puzzling. It does not, however, undermine the main conclusion about the analysis of non-local *right* and *wrong* drawn below.

[7]The findings above not only imply that *right/wrong* have meanings that are not captured by syntactic intrusion, but also that they *do not* have the meanings that syntactic intrusion would deliver. This raises the question of how to exclude the relevant intrusion parses, parses of the sort envisioned in Larson (2000). The answer might be that, despite embedding infinitival clauses, *right/wrong* lack a syntactic prerequisite for the parses in question. One prerequisite is the ability to support the formation of reduced relative clauses. The contrast between the acceptable *Liz underlined every number possible for her to underline* and **Liz underlined the number right/wrong for her to underline* indeed suggest that it is in this regard that *right/wrong* differ from *possible*.

[8]Morzycki (2016) actually assumes that logical forms containing *a* $\{t_1\}$ can give rise to attested interpretations, viz. the very same interpretations as the corresponding logical forms with *the* $\{t_1\}$. Morzycki makes this assumption to account for the apparent neutralization of the indefinite/definite contrast in minimal pairs with non-local infrequency adjectives (see section 3.5), such as *An/the occasional sailor on leave swaggered by*. It remains at present unclear how to reconcile this proposal with the fact that *a* does not ususally tolerate overt restrictors that necessarily describe singletons.

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