

Correction as Restatement

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Abstract

This paper studies the similarities between corrections expressed by plain juxtaposition of utterances (John didn't praise Bill. He praised Mary.) and restatements (John praised a student. He praised Mary.) and develops a unified pragmatic account of how these discourse relations are inferred. The inference results from a combination of the exhaustivity implicatures of the individual utterances on the assumption that the discourse topic, which determines the quantification domain of exhaustivity, remains constant.

1 Correction by juxtaposition

The focus of this paper is on pairs of juxtaposed utterances, such as (1), which express *correction*. We use the term 'correction' to refer to a discourse relation between an utterance that explicitly negates some proposition in the context, e.g. *John didn't praise Bill*, and one that "replaces" the "wrong" part of that proposition by a "correct" element: *he praised Mary*.

(1) John didn't praise BILL. He praised MARY.

This use of the term 'correction' is common in descriptive, typological and some philosophical literature, where it refers to a type of coordinative construction, as the one with the connective *but* in English, illustrated in (2), which expresses exactly the same idea as (1).¹

¹This use of the term should not be confused with the speech act of correction, which is more common in discourse relations literature (Asher and Lascarides, 2003; Spender and Maier, 2009). Correction as a speech act is a relation between the utterance providing the correct information, and the incorrect utterance, usually by a different speaker, as in (i).

(i) A: John praised Bill.

(2) John didn't praise BILL, but MARY.

One of the goals of this paper is to explain two characteristic properties of corrections expressed by plain juxtaposition of utterances without any marker, like (1), in which they differ from marked corrections like (2). First, correction by juxtaposition is *symmetric* in the sense that if the order of utterances is reversed, this does not affect the inference that the positive utterance provides a “replacement” for some incorrect material negated in the negative utterance. For instance, (3), just like (1), conveys the idea that *Bill* should be replaced by *Mary* in the hearer's representation of a specific situation of John praising another person.

(3) John praised MARY. He didn't praise BILL.

In contrast, (4) does not have the same effect as (2). It does not replace *Bill* by *Mary*, but rather suggests that John might have been expected to praise both Mary and Bill, and praised only Mary instead (see Jasinskaja, 2011, for a detailed study of the asymmetry of *but*).

(4) John praised MARY, but not BILL.

The asymmetry is most evident in dedicated correction markers like the German *sondern*. Reversing the order makes the sentence ungrammatical:

- (5) a. Hans hat *nicht* Peter *sondern* Maria gelobt.
Hans has not Peter CORR Maria praised
b. *Hans hat Maria *sondern nicht* Peter gelobt.
Hans has Maria CORR not Peter praised

The second interesting fact about correction by juxtaposition is that it is very widely spread across languages, if not universal. In languages like English and German, the juxtaposition pattern in (1)/(3) coexists with correction markers like *but* and *sondern*. In some languages, e.g. Georgian, juxtaposition is the most common way of expressing correction, whereas the correction marker *aramed* is restricted to formal style (Mauri, 2008, p. 129). Finally, there are languages that lack correction markers altogether (e.g. Lango of the Nilotic family, or Limbu of the Tibeto-Burman family), so juxtaposition is the only way to express correction (Mauri, 2008). In other words, languages differ in whether they have means to mark correction, but all of them seem to be able to express correction without any marker. It is therefore natural to assume that the processes that lead to a corrective interpretation in cases like (1) and (3) are of purely pragmatic nature.

B: No. He praised MARY.

The main goal of this paper is to characterise these pragmatic processes in precise terms, i.e. investigate the question exactly how we arrive at a correction interpretation without any correction marker, regardless of the order of the utterances, and apparently even in the absence of any supporting context. I will point out a number of similarities between unmarked corrections and another group of discourse relations, which I will refer to as *restatements*, and will argue for a unified analysis of both relation types (section 2). The theoretical tools to be used can be reduced to (broadly) Gricean pragmatics, enriched with a single coherence principle of *topic continuity* (section 3). In section 4, the approach will be applied to a number of concrete examples, whereas section 5 will discuss the implications of the present proposal in a broader theoretical perspective.

2 Restatement

Restatement is a group of discourse relations that connect utterances which present the same situation or entity, or otherwise “say the same thing” in different words.² This group includes such relations as reformulation (6), specification, (7) and (8), generalisation (obtained from (7) and (8) by reversing the order of utterances and adjusting the anaphora), elaboration, (9) and (10), and summary, i.e. “reversed elaboration”.

- (6) This piece begins with an anacrusis.
(It begins with) an unaccented note which is not part of the first full bar.
- (7) John praised a student. He praised Mary.
- (8) John went to Germany. He went to Berlin.
- (9) John praised two students. (He praised) Bill and Mary.
- (10) John made a poached egg. He boiled some water with a bit of vinegar, cracked an egg into a bowl, slid the egg gently into the water, and cooked it for about 3 minutes.

One common property of restatement and correction follows directly from their definitions. In both cases, the utterances describe the same situation. Except, if restatements typically give two positive descriptions of the same situation, in corrections, one utterance negates something about a certain situation, whereas the other asserts something about it. This is what gives rise to the replacive character of corrections.

²It is perhaps more common to use the term ‘elaboration’ to refer to this class of relations. However, ‘elaboration’ intuitively suggests an increase in the degree of detail—a connotation that we would like to avoid.

From the point of view of linguistic realisation, corrections and restatements share the ability to be expressed by two juxtaposed utterances without *any* segmental or intonational indication of connection between them. It might seem at first glance that this property is not very interesting since it is commonly believed that almost any discourse relation can be expressed without explicit marking. The examples of narration in (11) and parallel in (12) look like perfectly unmarked juxtapositions of utterances.

(11) John came into the room. He poured himself a cup of coffee.

(12) John praised Bill. Sue praised Mary.

However, as is argued in Jasinskaja (2007, 2010b) and Jasinskaja and Karagjosova (2011), one should distinguish between two kinds of unmarked connection. The type instantiated in (11) is only “seemingly” unmarked. That is, discourses like (11) usually get better (i.e. start sounding more natural) if one continues with something like *and took place in front of the TV*. Without a continuation starting with *and* or another discourse marker from a certain range (*then, so, etc.*) the discourse sounds incomplete. One is tempted to put ‘...’ in the end, or read it with a rising “open list” intonation on each utterance. It is well known that in many languages when additive conjunctions are used to connect more than two clauses they need not be repeated after every clause. Overt realisation before the last conjunct is usually enough (Haspelmath, 2007). It seems that the same property can be attributed to a number of other discourse markers (Asher and Lascarides, 2003, pp. 182–183, 200). In other words, the apparent unmarked connection in (11) is in fact a realisation of a silent *and* or *then* in a non-final list position.

One can also make (11) sound better by using “comma” intonation in the first utterance. But if we read the full stops, literally, as full stops, i.e. with a nuclear accent H* followed by a low phrase tone and boundary tone L-L% (Pierrehumbert, 1980) on both utterances, then (11) would sound rather awkward. Thus, comma intonation is another way to mark the presence of a connection between utterances.

The example in (12), in turn, is likely to be pronounced with some kind of contrastive topic accentuation on *John* and *Sue*, and even without it, the default alignment of grammatical subject with topic leads towards the interpretation of *John* and *Sue* as topics, whereas the fact that these are distinct individuals results in the interpretation as contrastive topics. But contrastive topic is another clause-linking device, so the connection in (12) is not entirely unmarked either. Compare (12) to (13) without a contrastive topic, which sounds rather bad as such, though could be saved by inserting *also* to indicate an additive relation, or *...ehm...I mean...* to indicate self-repair, or *then* to indicate narration, etc.

(13) ??John praised Bill. He praised Mary.

In contrast, restatements (6)–(10) and corrections (1)/(3) allow for “properly unmarked” connection. That is, they are perfectly felicitous with the full-stop H* L-L% intonation on both utterances, i.e. without intonational marking of connection, without segmental discourse markers, without contrastive topics, and without giving rise to any sense of incompleteness. As is argued in Jasinskaja (2007, 2010b) and Jasinskaja and Karagjosova (2011), the range of discourse relations that can be properly unmarked is quite limited. Apart from restatements and corrections, the only other group of relations that shows the same property is explanation relations (evidence, motivation, background, causal explanation), i.e. relations where the second utterance gives support to the statement made in the first:

(14) John fell. He slipped on a banana peel.

(15) John didn’t come to the office. He broke his leg.

However, restatements and corrections differ from explanations in their tendency for parallel syntactic structure and a substantial amount of shared linguistic material between the utterances, e.g. *John praised* in (7), or *John* and *praised* in (1). The common denominator can sometimes be quite weak, e.g. in (10) it is just *John did something*. However, it plays a constitutive role in restatements and corrections showing that the utterances present objects of the same type. That is, restatement and correction belong to the class of *resemblance* relations in Kehler’s (2002) taxonomy of discourse relations. In contrast, explanations are *cause-effect* relations. Even if the utterances in (14) and (15) happen to have a non-trivial common denominator, this is an accidental property, not essential for establishing coherence in explanation discourses.

Corrections and restatements are also similar in that they are both symmetric in the sense explained in the previous section. That is, the order of utterances does not affect the fact that they describe the same situation. Thus in both (16-a) and (16-b) the utterances refer to the same act of praising with agent John and theme Mary, who is a student. Similarly, in both (17-a) and (17-b) there is a single act of John praising a person.

(16) a. John praised a student. He praised Mary.

b. John praised Mary. He praised a student.

(17) a. John didn’t praise BILL. He praised MARY.

b. John praised MARY. He didn’t praise BILL.

This does not mean that the order of utterances does not have any effect at all. Obviously, (16-b) is rather marked as compared to (16-a) as it seems to violate the natural order of presentation in discourse: general information first, specific

information second. Indeed, the second utterance in (16-a) conveys new information, no matter if the hearer knows that Mary is a student, or not. The second utterance in (16-b), however, conveys new information only on the assumption that the hearer does not know or cannot readily access the information that Mary is a student, and even then, if the whole point were just to communicate that Mary is a student, there is an easier way to do it, e.g. by uttering *She is a student*. (16-b) seems only justified in a context where this particular form of the second utterance is chosen to make a point. For instance, in a scenario where John is known to be nasty to students and never praise them, the following is a felicitous discourse, where the main point of the utterance *He praised a student* is to present a piece of information inconsistent with our usual assumptions about John (cf. Danlos, 1999; Danlos and Gaiffe, 2004, on the role of generalisations in “forging links” between various pieces of knowledge).

- (18) Can you imagine? Yesterday at the department meeting
John praised Mary! He praised a student!

In corrections, as well, considerations of relative informativity and relation to context have an effect on the order of presentation, even though the contrast is, perhaps, less striking. First, notice that it is not necessary to use both a positive and a negative sentence in order to correct, for instance, another speaker’s utterance. The positive sentence is generally sufficient, cf. (19). One can also only use the negative sentence to contradict the same claim, cf. (20), however there is a strong intuition that B’s reply in (20) provides less information than that in (19).

- (19) A: I thought John praised Bill
B: He praised MARY
- (20) A: I thought John praised Bill
B: He didn’t praise Bill.

One way to account for this observation is to assume that the positive sentence in (19-B) is interpreted exhaustively with respect to the implicit question *Who did John praise?*, on which the speakers disagree. This amounts to saying that John praised Mary and no other person, from which it follows that he did not praise Bill. The accentuation pattern with the nuclear accent on *Mary* is consistent with the interpretation of *Mary* as narrow focus, which, in turn, is congruent with this question.³ In (20-B), the negative sentence can be either taken to answer

³Steube (2001) argues that, at least in German, corrections involve a special kind of accent, a contrastive accent with specific prosodic characteristics that distinguish it from other accent types, and that a corrective function is associated with it by convention. If that were true across the board, then there would be no need to *infer* a correction relation in the juxtaposition examples discussed in this paper. Correction would simply be explicitly encoded by prosody. We do not argue against

an implicit *yes/no*-question like *Did John praise Bill?*, or the same kind of *wh*-question as in (19): *Who did John praise?* (presumably depending on whether the main stress is on the negative particle or on *Bill*, which is both possible). In either case, exhaustive interpretation does not give rise to a stronger statement than the literal meaning of the sentence, i.e. John didn't go to Paris, and we do not know about other places he could have gone to (Schulz and van Rooij, 2006; Spector, 2005). In other words, (20-B) strictly follows from (19-B) when exhaustivity is taken into account.

The same considerations apply to the negative and the positive utterance in corrections like (17). One might wonder why express the negative part at all if it follows from the positive part, however it often helps to identify what is being corrected in cases where the target of correction is not as salient in the context as in (19) and (20), or in the case of ambiguity:

- (21) A: I thought John praised Bill and Sue.
 B: (i) He didn't praise either. He praised Mary.
 (ii) He didn't praise Bill. He praised Mary.
 [\Rightarrow John praised Mary and Sue]

The relative strength of the positive and the negative utterance, and the function of the negative utterance to indicate which part of the hearer's assumptions is to be corrected, would suggest that the negative-positive order of utterances as in (17-a) should be more natural from the point of view of discourse dynamics: weaker statement first, more specific statement second; contextual link first, new information second. Indeed, the negative utterance in (17-b) feels more like an afterthought, in contrast to (17-a). We do not have corpus data for unmarked corrections, but the data for symmetric correction markers, such as the Russian *a*, reported in Jasinskaja (FDSL), suggest that there is a statistical preference for the negative-positive order, even though the correction marker does not categorically prescribe it: out of a total number of 418 occurrences of the Russian corrective *a*, 362 (86.6%) are with the negative-positive order of conjuncts, and only 56 (13.4%) are positive-negative. It is not unlikely that we would find a similarly skewed distribution for correction by juxtaposition.

In other words, both restatement and correction by juxtaposition are symmetric in the sense that the order of utterances does not affect the interpretation of the sequence as restatement or correction, although in both cases the order can affect interpretation or general acceptability due to considerations of informativity and the role of the utterance as a contextual link or as one that presents the main point.

that view, but neither does the account developed in this paper rely on accent type. It is therefore also applicable to written language and, at least as far as accentuation is concerned, is immune to scepticism around the role of prosody in properly linguistic interpretation.

Finally, the inference of a restatement relation in sequences like (6)–(10) does not appear to be language specific. It is available in all the better studied languages of Europe, at least. Of course, languages differ in how acceptable sequences of short sentences are in general. In some languages it is not unusual to tell a whole story in one sentence, that is, only the last utterance gets finiteness marking characteristic of a full sentence, whereas all the preceding material is presented in converb clauses, relative clauses and other kinds of syntactically subordinate constructions. It is natural to expect that the expression of restatement relations by juxtaposing full sentences would be rather unusual in such languages, but even there we should be able to find unmarked restatements in spoken, non-narrative discourse, especially in dialogue.

In summary, corrections and restatements share a number of properties which invite a unified explanation.⁴ The explanation should probably be cast in pragmatic terms, as there is no reason to assume that languages differ in their ability to express correction or restatement by plain juxtaposition of sentences, and obviously, there is no overt linguistic material or syntactic construction, with which the correction or restatement function could be associated by convention. The next section spells out the main positions of such a pragmatic analysis.

3 Pragmatic principles

Implicature and coherence: The central assumption of the present approach is that utterances in discourse address discourse topics, where discourse topics are understood as questions to be answered by the utterances, following the main idea behind a large (though somewhat heterogeneous) group of approaches including Klein and von Stutterheim (1987), van Kuppevelt (1995), Ginzburg (1996), Roberts (1996), Buring (2003), and Beaver and Clark (2008). Questions represent what is relevant at a given point in discourse, what kind of information should be provided.

The account of restatement relations developed in Jasinskaja (2007), as well as its extension to correction relations in this paper, is based on two principles: the principle of exhaustivity (22), and the principle of topic continuity (see below). Exhaustivity, which was already briefly introduced in the previous section, is a standard type of pragmatic enrichment of the literal meaning of a sentence (an implicature) which is sensitive to the current question under discussion. For

⁴The idea that correction by juxtaposition is an instance of elaboration was previously expressed by McCawley (1991, p. 195). McCawley, however, restricts the analogy to corrections with negative-positive order of sentences and elaborations in the narrow sense, where the second sentence provides more specific information than the first. As I have tried to show, the analogy can be extended to positive-negative corrections and generalisations.

example, as an exhaustive answer to the question *Who did John praise?*, the utterance *John praised Mary* implies that John praised Mary and no one else. If the same utterance is interpreted exhaustively with respect to the question *What did John do?*, then it implies that praising Mary is the only (relevant) thing that John did.

(22) *The Principle of Exhaustivity:*

By default, an utterance is interpreted exhaustively (with respect to the current discourse topic).

Strictly speaking, exhaustivity need not be assumed as a basic principle. It follows from the application of the Gricean maxim of Quantity restricted by Quality and Relevance: provide as much information as you can without violating Quality, i.e. without making false or unwarranted statements, and without violating Relevance, i.e. without giving irrelevant information. Thus, if the speaker utters *John praised Mary* addressing the question *Who did John praise?* and doesn't mention Bill, this can be indicative of two things: Either the speaker does not consider Bill relevant, that is, she interprets the question as coming with an implicit domain restriction that excludes Bill from consideration, or she does not believe that John praised Bill: $\neg \text{BEL}_S(\text{praise}(j, b))$. On the (default) assumption that the speaker has an opinion on the question under discussion, this inference can be strengthened to $\text{BEL}_S(\neg \text{praise}(j, b))$, i.e. the speaker believes that John didn't praise Bill. This reasoning applied to all the elements in the domain of the question gives us the exhaustivity inference. The question whether this inference really results from reasoning with Gricean maxims and alternative possible speech acts, or there is a covert operator in the sentence structure which generates exhaustivity inferences in the grammar, is much debated (see e.g. Chierchia et al., 2008; Geurts, 2010, for recent representations of both positions). For the purposes of this paper, however, the question is largely irrelevant, that is why I will stick to the less general, but also less controversial statement of the principle given in (22).

The second principle states that by default, the discourse topic does not change, cf. (23), i.e. in the absence of explicit indications to the contrary consecutive utterances address the same question.⁵ This is a manifestation of a more general coherence principle such as *Maximise Discourse Coherence* (MDC) in Asher and Lascarides (2003) or *NEW in Zeevat (2010), which bids you to establish as many and as strong links as possible between utterances in discourse, including anaphoric links, presupposition resolutions, rhetorical relations, etc.⁶

⁵Discourse connectives like *and* and *but*, other discourse markers, intonation, contrastive topic marking can serve as indications to the contrary since these devices encode constraints on what the discourse topic is like, or how the discourse topics of two utterances relate to each other, see discussion in section 4.

⁶*Don't accommodate* (Van der Sandt, 1992) and *Don't overlook anaphoric possibilities* (Hen-

- (23) *The Principle of Topic Continuity:*
By default, the discourse topic does not change.

Here is a brief informal illustration of how the two principles work together to account for restatements and corrections like (24) and (25).

- (24) a. John praised a student.
b. He praised Mary.
- (25) a. John didn't praise BILL.
b. He praised MARY.

Topic continuity makes the hearer find the strongest common discourse topic for the two utterances, which is the question *Who did John praise?* in both cases. Exhaustivity requires that each utterance be interpreted exhaustively with respect to that question. That is, the only relevant person John praised is a student (exhaustivity applied to (24-a)) and the only relevant person John praised is Mary (exhaustivity applied to (24-b)). Obviously, Mary must be that student since otherwise she would not be the only relevant person praised by John (provided that the set of relevant persons did not change from (24-a) to (24-b), which is again a consequence of topic continuity). Thus *Mary* specifies the reference of *a student* in (24), i.e. we infer a specification relation. In (25) the intended effect of exhaustive interpretation is: the (only) person that John praised is not Bill, for (25-a), and the (only) person that John praised is Mary, for (25-b). Again, since due to exhaustivity there is only one relevant person being praised in a unique relevant praising situation, Mary can only replace Bill in that function. Thus we derive the replacive property of correction.

The specific predictions of this approach depend, of course, on the precise import of exhaustivity, and on what exactly discourse topics are and what it means to answer the same or a different question.

Discourse topics: Questions can be conceived of in a number of ways. A question can be identified with the question predicate, i.e. the property that we get by abstracting over the *wh*-variables, e.g. $\lambda x[\textit{praise}(j, x)]$ for *Who did John praise?* It can be a set of mutually compatible Hamblin-style alternatives as in (26), cf. Hamblin (1973); a partition of the logical space along the lines of Groenendijk and Stokhof (1984), i.e. a set of mutually exclusive alternatives which do not only specify who John praised, but also who he did not praise; or one of a number of different “intermediate” conceptions, e.g. Karttunen (1977), Spector (2005), Groenendijk and Roelofsen (2009). It turns out that different conceptions of questions are convenient for defining different aspects of topic continuity. Without

driks and de Hoop, 2001) capture specific aspects of the same basic insight.

giving a precise definition, let us consider a number of representative examples of what constitutes a smaller and a greater violation of this principle.

(26) {‘John praised Bill’, ‘John praised Mary’, ‘John praised Sue’}

To begin with, both sentences in (24) or (25) can be seen as answers to the question *Who did John praise?* ($\lambda x \exists e [agent(e, j) \wedge theme(e, x) \wedge praise(e)]$) and *What did John do?* ($\lambda e [agent(e, j)]$), but the latter presents a greater violation of topic continuity since it does not recognise that the sentences have more in common than the agent John. Or put differently, any answer to the question *Who did John praise?* is also an answer to *What did John do?* but not vice versa. Thus utterances that have *Who did John praise?* as a common topic have more common topics than utterances that only share the question *What did John do?* The more common topics, the happier is the topic continuity principle, which ultimately leads to a preference for stronger common question predicates.

The question predicate does not uniquely identify a set of alternatives. Strictly speaking, the question predicate should always contain a domain restriction C , as in $\lambda x [praise(j, x) \wedge x \in C]$, a contextual variable resolved to a set of *relevant* objects of the appropriate type. For instance, if C is the set {Bill, Mary, Sue} then the question *Who did John praise?* with the question predicate $\lambda x [praise(j, x) \wedge x \in C]$ corresponds to the alternative set in (26). The topic continuity principle prefers interpretations where the instantiation of the C variable does not change. This ensures that in (24-a) exhaustivity excludes all non-students among Bill, Mary, and Sue, whereas in (24-b) this leads to a further restriction to Mary only. If the C -set in (24-a) contained some other element, e.g. Tom, instead of Mary, the specification inference would not be granted, since the student meant in (24-a) could be Tom.

However, the requirement of literal identity of the instantiations of the domain restriction C is often too strong. In examples like (27), intuitively, the utterances address the question *Where did John go?* at different levels of granularity. In (27-a) C is a set of countries, while in (27-b) it is a set of cities. On the other hand, in both cases C can be seen as a partition, or conceptual cover (cf. Aloni, 2000; van Rooy, 2003) of the same basic domain of geographic regions in, let’s say, Europe. The case where C is instantiated to distinct conceptual covers of the same basic domain, is a less grave violation of topic continuity than the case where C is instantiated to distinct basic domains, e.g. sets of regions in Europe vs. Asia.

(27) a. John went to Germany.
b. He went to Berlin.

Finally, explanation discourses like (14) and (15) satisfy topic continuity in an entirely different way, which will not be discussed in detail here. Briefly, the second utterance functions as a contribution to the same question as the first, because the first one did not manage to answer it in a satisfactory manner, due to lack of some background information, supporting evidence, etc. (see Jasinskaja and Karagjosova, 2011, for details). The common topic in this case may be much more specific than the common denominator derived on the basis of the explicit material in the sentences, such as *What happened to John?* in (14) and (15).

Exhaustivity: Apart from the standard Gricean derivation of exhaustivity effects recapitulated above, the literature offers a variety of exhaustivity operators, which take the literal semantic meaning of a sentence or a subsentential constituent and, usually, the discourse topic question, as arguments, and return the exhaustive interpretation of that sentence or constituent. Some of these operators are intended as formalisations of Gricean reasoning (e.g. Schulz and van Rooij, 2006), while others have been proposed as covert operators in the sentence structure that should replace Gricean reasoning in the calculation of implicatures on principled grounds (Chierchia et al., 2008, and references therein). The main argument usually proffered in support of the latter position is the existence of so-called local implicatures, i.e. cases where the implicature is apparently derived in the scope of some operator in the sentence. For present purposes, the role of an exhaustivity operator is to make the contribution of exhaustivity to the inference of restatement and correction relations formally precise, and we will stay largely impartial to the Gricean vs. localist debate.

In order to understand the precise role played by exhaustivity in corrections, it is necessary to understand how exhaustivity interacts with negation. As was pointed out in section 2, exhaustivity plays a role in determining the relative strength of utterances and there is an asymmetry between positive and negative utterances in that respect. Whereas a positive answer to a (positive) *wh*-question as in (28) gives rise to standard exhaustivity effects: John didn't praise Bill, Sue, etc., a negative answer as in (29) implies at best that the speaker does not know whether John praised Bill or Sue, or does not consider those individuals relevant, but it does not imply either that John praised or that he did not praise Bill, Sue, etc. on its most accessible reading. In any case, the only thing that is for sure is that John didn't praise Mary, i.e. the literal meaning of the sentence.⁷ On the face of it, it seems that either an exhaustivity operator does not apply at all in (29), or it applies but does not have any visible effect.

(28) A: Who did John praise?

⁷In fact, even that is not for sure, as will become clear in section 4, see discussion of (48).

- B: He praised Mary.
- (29) A: Who did John praise?
B: He didn't praise Mary.

Cases like (29) did not receive that much attention from developers of formal conceptions of exhaustivity, so it is not surprising that most theories make no or false predictions in such cases. For instance, Groenendijk and Stokhof (1984) predict that the answer in (29) implies that John didn't praise anyone. Von Stechow and Zimmermann (1984) take up the challenge, but they concentrate on a different, less prominent reading of (29) on which the answer suggests that John praised everyone else except Mary, i.e. Mary is the only person that John didn't praise. I agree with Schulz and van Rooij's (2006) and Spector's (2005) assumption that this reading is, perhaps, available in a certain type of context, but that the weak reading spelled out above is more common and deserves attention in its own right.

Schulz and van Rooij (2006) and Spector (2005) concentrate primarily on the epistemic implicature in (29), i.e. that the speaker does not know whether John praised Bill, Sue, or any other individuals. According to Schulz and van Rooij (2006), it is the deviant form of the answer, i.e. the use of negation in response to a positive question, or fall-rise intonation frequently found in such answers, that shows that the speaker is not taking up the question asked, presumably because he or she is not competent on that question. The exhaustivity operator they propose is made sensitive to the competence of the speaker and does not deliver any effect beyond the literal meaning of the sentence if competence cannot be assumed. Spector (2005) develops a theory in which the epistemic implicature is derived directly from the semantics of the negative answer and the semantics of the question with the help of a number of quasi-Gricean maxims, including *negative quantity*, a counterpart of the positive quantity, more familiar as the general quantity maxim.

The problem with both approaches is that neither works very well on corrections, for the simple reason that the negative utterance in corrections probably does not give rise to epistemic implicatures, or those implicatures get cancelled and ultimately do not contribute to the overall interpretation of a corrective discourse. On the assumption that we made above that both utterances in (30) address the question *Who did John praise?* one would have to say, following Schulz and van Rooij and Spector, that the first utterance in (30) gives rise to the implicature that the speaker is incompetent on the topic question. However, the very next utterance suggests that she is competent on the same question. Since obviously, the speaker's knowledge of who John praised could not have changed in mid turn under normal circumstances, Schulz and van Rooij would either have to assume that the speaker continues being incompetent, in which case the exhaustive interpretation of the second utterance should not have any visible effect either, so the implicature that John didn't praise Sue, which is intuitively present after processing the whole

discourse, would not be derived; or they would have to backpropagate the competence assumption down to the first utterance, in which case their theory would predict a von Stechow and Zimmerman type reading, i.e. John praised everyone else but Bill. If the domain of relevant individuals contains more elements than just Bill and Mary, the exhaustive interpretations of the two sentences would be inconsistent, the negative sentence implying that John praised Sue, the positive sentence implying that he didn't praise Sue.

(30) John didn't praise BILL. He praised MARY.

It is not entirely clear what Spector (2005) would predict for (30), but presumably, the implicature that the speaker does not know about other relevant individuals whether John praised them would have to be cancelled in the face of the second utterance. This is, by itself, consistent with the facts, but it does not make any predictions with regard to the replacive character of correction, i.e. the intuition that the two utterances refer to the same praising event and that Mary replaces Bill as the praisee. To adopt this line of thinking would mean to give up the idea that exhaustivity plays the same role in corrections, as it does in restatements, in establishing this relation.

Although both Schulz and van Rooij (2006) and Spector (2005) concentrate on the epistemic implicature, it seems that another possible way to make sense of their approaches in application to corrections would be to appeal to relevance. As Spector points out, a negative answer to a positive question as in (29) could also be understood to suggest that the speaker does not consider it relevant whether individuals other than Bill were praised by John. If the speaker's knowledge of the facts does not normally change as he or she is communicating those facts, what is relevant changes all the time as the discourse is progressing. Thus for (30) one could assume that the speaker's plan is to deal with Bill first (i.e. other individuals are not yet relevant at this stage) and to address the general question *Who did John praise?* in the second utterance, where alternative individuals become relevant. In short, this would mean to assume that the utterances in (30) do not answer the same question, or the domain restriction C of the question is not the same. In the negative utterance, C is a singleton set containing only Bill, while in the positive one it also includes Mary and other individuals. It is obvious that an answer to a question with a singleton set of alternatives (or, which is almost the same, an answer to a polar question *Did John praise Bill?*) does not give rise to any exhaustivity inferences beyond the literal meaning of the sentence. This is predicted both by Schulz and van Rooij (2006) and Spector (2005) as well as most other theories of exhaustivity.

This approach seems intuitively quite plausible, and my final proposal will differ only minimally from it. The problem with it is, once again, that it does

not predict that the utterances in (30) refer to the same situation. Moreover, the change of discourse topic from a polar to a *wh*-question, or from a singleton to a non-singleton domain restriction *C*, is a violation of topic continuity. This would not be a problem if there were some explicit marker, e.g. *but*, to which one could attribute the function of violating the topic continuity default. But since there is no such marker in (30), the default should apply and the utterances should be addressing the same question. On this view, again, one cannot maintain the analogy between corrections and restatements. Topic continuity does not play the same role in establishing the identity of the described situations in both cases.

My proposal is as follows. The topic change approach is right, in principle, but it describes a different class of discourses, for instance those in (31), as well as (4), discussed in the beginning of this paper. These are not corrections. Bill is not “replaced” by Mary in a certain praising event. Rather, the discourses simply state that there was no event of John praising Bill, while there was an event of John praising Mary. The most straightforward analysis would be to assume that the first utterance addresses the question *Did John praise Bill?*, and the second *Did John praise Mary?* This is exactly the kind of topic change that one would expect to be signalled by *but* in (31-a) (cf. the theory of *but* in Jasinskaja and Zeevat, 2009), while in (31-b) it could be attributed to the polarity focus, realised as pitch accent on the auxiliaries.⁸

- (31) a. John didn't praise BILL, but he praised MARY.
 b. John DIDN'T praise BILL. He DID praise MARY.

In corrective discourses like (30), the apparent absence of exhaustive strengthening in the negative utterance is due to rather different reasons than in van Rooij and Schulz' and Spector's cases. Here it is not that we first calculate the semantics of the negative sentence and then apply exhaustivity to it, but the other way round: it is the assumption that Bill is the exhaustive answer to the question *Who did John praise?* that is negated, or in other words, exhaustivity applies in the scope of negation. This use of negation is often referred to as metalinguistic (Horn, 1989), whose most essential property is that at least some material in its scope is used echoically (Carston, 1996), representing an actual or possible utterance, including its propositional content, presuppositions, implicatures, form of words, etc. The affinity between metalinguistic negation and corrective contexts is well known. Corrections exploit the possibility given by metalinguistic negation to negate the

⁸Notice that neither the negative nor the positive utterance in (31) seems to imply that John did or didn't praise, let's say, Sue, even if the discourse is used as a reply to a question *Who did John praise?* This follows directly from the assumption that the utterances answer polar subquestions of that question. Spector (2005) discusses a whole class of “mixed polarity” answers, concentrating on the epistemic implicature that the speaker does not know whether John praised Sue. I believe that Spector's cases belong to the same class as (31).

proposition enriched with its exhaustivity implicature.⁹ Thus in (30), the contribution of the negative utterance is: it is not the case that Bill (and only Bill) is the person that John praised.¹⁰

One could say that the negative utterance in (30) as a whole addresses the question *Is ‘Bill’ the right answer to the question ‘Who did John praise?’*, i.e. a polar question as in the relevance-based solution discussed above. However, in doing so it also addresses the question *Who did John praise?* The latter is the discourse topic shared with the positive utterance which satisfies the topic continuity requirement. The exhaustivity principle is satisfied in that both *Bill* and *Mary* are interpreted as exhaustive answers to that question.¹¹

The next section will demonstrate how these assumptions lead, under the application of the two pragmatic principles, to the inference that the utterances in corrections, as in restatements, describe the same situation, with the characteristic “replacive” effect in corrections. These cases will be compared to others where one of the principles is violated and the inference does not occur. It turns out that for demonstration purposes, the most convenient formal conception of exhaustivity is one along the lines of Zeevat (1994) and Rullmann (1995), which corresponds most closely to the informal gloss we gave above, i.e. roughly the semantics of a cleft construction: ‘it is Mary that John praised’, or ‘who John praised is Mary’. On this view, the exhaustivity, or rather, the *maximality* operator applies to the question *Who did John praise?*, i.e. the question predicate $\lambda x[\textit{praise}(j, x)]$ and delivers a “definite description” similar to the meaning of a free relative *who John praised*, which denotes a *maximal individual* (possibly complex, i.e. a mereological sum of a set of atomic individuals) that satisfies the property of being praised by John, $\textit{max}(\lambda x[\textit{praise}(j, x)])$. Rullmann’s definition is given in (32):

$$(32) \quad \textit{max}(P) = \iota x(P(x) \wedge \forall x'[P(x') \rightarrow x' \leq x])$$

⁹One should note that this is an affinity, and not a requirement. Corrections often exploit metalinguistic negation to put exhaustivity in the scope of negation, but there are other ways to do so, for instance, by using a construction with exhaustive semantics, such as the cleft construction in English: *It is not Bill that John praised. It is Mary.* This is an instance of normal, descriptive use of negation.

¹⁰This proposition is even weaker than the literal meaning of the negative sentence *John didn’t praise Bill* with normal, descriptive negation, since it is compatible with the situation where Bill is not the only person praised by John, but one of them, as in examples like *John didn’t praise Bill, but both Bill and Mary*, see discussion of (48) in section 4.

¹¹Since exhaustivity applies in the scope of negation according to this proposal, this might be seen as an argument for a localist view of implicature. However, Geurts (2010) argues that embedded implicatures in contrastive contexts constitute an exception to the general utterance-level calculation of implicatures, and can be accommodated in the Gricean picture. Corrections with metalinguistic negation are the most prototypical instances of contrastive contexts. Therefore, the present approach is, in principle, compatible with both views.

The definition says that $\text{max}(P)$ is an individual that has property P such that no other individual which is not its mereological part has property P . In a world, where Bill is the only individual that has property P , $\text{max}(P)$ will return Bill, whereas in a world where Bill and Mary are all and only atomic individuals that have property P , $\text{max}(P)$ will return the mereological sum of Bill and Mary: $b \oplus m$. The exhaustive interpretation of answer A with respect to a question Q is then defined as in (33):

$$(33) \quad \text{exh}(A, Q) \Leftrightarrow [\text{max}(Q) = A]$$

That is, the maximal individual that satisfies the question predicate is set equal with the answer,¹² i.e. quite literally: who has property Q is A . For example, the exhaustive interpretation of the answer *Bill* with respect to the question *Who did John praise?* is represented as $\text{max}(\lambda x[\text{praise}(j, x)]) = b$, and is true in worlds where Bill is the maximal, i.e. the only individual praised by John. The exhaustive interpretation of the answer *Bill and Mary* with respect to the same question is $\text{max}(\lambda x[\text{praise}(j, x)]) = b \oplus m$ and is true in worlds where the mereological sum of Bill and Mary is the maximal individual praised by John, i.e. Bill and Mary and no one else is praised by John. The predictions of this approach are demonstrated in the next section.

4 Example analyses

To begin with, (34) shows the familiar example of a restatement relation (specification). On the assumption that the question addressed by both utterances is *Who did John praise?*, i.e. $\lambda x[\text{praise}(j, x) \wedge x \in C]$ and the contextual variable representing the implicit domain restriction is instantiated to the same set C in accordance with topic continuity, the respective exhaustive interpretations of the utterances (34-a) and (34-b) are as in (35-a) and (35-b). The expression in (35-a) says that there is an individual y who is a student, and that individual is who John praised ($\text{max}(\lambda x[\text{praise}(j, x) \wedge x \in C])$); (35-b) says that Mary (m) is who John praised. If y is who John praised and Mary is who John praised then Mary is y , cf. (35-c).

¹²Obviously, this requires bringing the answer A down to the semantic type of individual. Some ways of doing that are spelled out in Zeevat (1994). In this paper we only consider answers of type e (proper names), and indefinites. In the dynamic semantics developed by Zeevat (1994) the contribution of an indefinite amounts to introducing a new discourse referent that has the property expressed by the descriptive content of the NP, and setting it equal to the exhaustivization of the question, roughly as in (33). In the non-dynamic notation style used in this paper, this corresponds to $\exists x[P(x) \wedge \text{max}(Q) = x]$, where P is the descriptive content of the indefinite, i.e. the property *student* for the NP *a student*.

- (34) a. John praised a student.
 b. He praised Mary.
- (35) a. $\exists y[student(y) \wedge max(\lambda x[praise(j, x) \wedge x \in C]) = y]$
 b. $max(\lambda x[praise(j, x) \wedge x \in C]) = m$
 c. $y = m$

It was emphasised above that utterances connected by a restatement relation refer to the same situation, but here we only seem to have derived coreference between the NPs *Mary* and *a student*. However, if we represent events explicitly, their coreference also follows. The topic question is then something like $\lambda x \exists e[praise(e, j, x) \wedge x \in C]$, in which case $max(\lambda x \exists e[praise(e, j, x) \wedge x \in C])$ returns an individual x only in worlds where there are events of John praising someone, and since it returns the maximal such individual, the set of events for which $praise(e, j, x)$ is verified is the same in (34-a) and (34-b). Note that with this representation the implicit domain restriction can be defined on events instead of individuals: $e \in C$. This allows to impose more fine-grained contextual restrictions, since sets of events can be constrained not only by their participants, but also by their time, location, causal links, etc. This captures the intuition that the exhaustive interpretation of an utterance like (34-b) says that Mary is the only person John praised on a particular occasion—at a certain point in a certain conversation, and not generally.

Applying the same idea to the correction (36) amounts to (37). As was argued above, exhaustivity contributes the $max(\dots)$ expression inside the scope of negation. Topic continuity ensures that the sets of events in both utterances are restricted to the same set that occurred on a particular occasion. The negative utterance, cf. (37-a) says that who John praised on that occasion is not Bill, while the positive utterance, cf. (37-b) says that it is Mary. Hence the intuition that the utterances describe the same situation and that Mary ‘replaces’ Bill as the object of praise in that situation.

- (36) John didn’t praise BILL. He praised MARY.
- (37) a. $\neg[max(\lambda x \exists e[praise(e, j, x) \wedge e \in C]) = b]$
 b. $[max(\lambda x \exists e[praise(e, j, x) \wedge e \in C]) = m]$

Notice that in both cases the inference goes through regardless of the order of utterances. Since there is always only one (if any) maximal individual with a particular property, that individual is the one to which both utterances refer. Anaphora is not directly involved in this inference, so even indefinites that normally do not refer anaphorically can turn out to be coreferential with a previously introduced entity, cf. examples like (16-b) and extensive discussion in Danlos (1999) and Jasinskaja (2007).

In cases like (38) it might seem that the exhaustivity-based inference makes little sense since *Bill* is neither assumed by speaker A to be the exhaustive answer to the question *Who did John praise?*, nor is *Mary* in speaker B's view, since the fact that John praised Sue is not under dispute. To account for such cases, the implicit domain restriction C must be narrowed down accordingly, to pick out just the fragment of reality whose representation is being revised. In (38), C must be restricted to $\lambda e[\textit{praise}(e, j, x \oplus s) \wedge x \neq s]$, which restricts the question to *Who did John praise in addition to Sue?*

- (38) A: I thought John praised Bill and Sue.
 B: He didn't praise Bill. He praised Mary.
 [\Rightarrow John praised Mary and Sue]
- (39) a. $\neg[\textit{max}(\lambda x \exists e[\textit{praise}(e, j, x \oplus s) \wedge x \neq s]) = b]$
 b. $[\textit{max}(\lambda x \exists e[\textit{praise}(e, j, x \oplus s) \wedge x \neq s]) = m]$

The relative infelicity of (40) with the full-stop intonation on both utterances (cf. the discussion of (13) in section 2) is the result of a contradictory interpretation. An analysis along the same lines as in the examples above gives that both Mary (m) and Bill (b) are the only person praised by John, cf. (41). From this it follows that Mary and Bill are the same person, $m = b$.

- (40) ?? John praised BILL. He praised MARY.
- (41) $[\textit{max}(\lambda x[\textit{praise}(j, x)]) = b] \wedge [\textit{max}(\lambda x[\textit{praise}(j, x)]) = m]$ ¹³

The following examples illustrate cases where the topic continuity principle is violated and the inferences of identity between individuals or events that we find in restatements and corrections do not take place. In (42), the grammatical subjects *John* and *Sue* refer to distinct individuals. They could bear a contrastive topic accent indicating that the utterances address two different questions *Who did John praise?* and *Who did Sue praise?* (Büring, 2003; Krifka, 2008), but this is not necessary. There is a general tendency for grammatical subjects to be interpreted as topics, which in our framework means that they constitute part of the question, rather than the answer. This is a violable constraint, but it is stronger than the topic continuity default. So in a sequence of sentences with distinct subjects we normally expect a topic change. All (43) says is that Bill is the person that John praised, whereas Mary is the person Sue praised, which does not imply anything with respect to coreference of individuals involved or the events of praising. The same kind of analysis will apply to sentences with distinct frame adverbials and distinct fronted constituents, since all these devices have a delimitation function,

¹³Henceforth we will suppress events and the implicit domain restriction variable C in the representation of the examples.

restricting the domain of the topic question (cf. Krifka, 2008).

(42) John praised BILL. Sue praised MARY.

(43) $[max(\lambda x[praise(j, x)]) = b] \wedge [max(\lambda x[praise(s, x)]) = m]$

Examples like (44) also belong to the same category. Depending on whether *Bill* and *Mary* are considered focus and negative vs. positive polarity the contrastive topic, or the other way round, the utterances either address the questions *Who didn't John praise?* and *Who did he praise?*, respectively, or *Did John praise Bill?* and *Did John praise Mary?* (Jasinskaja, 2010a) The first case is parallel to the examples above, and in the second case the questions are polar, so exhaustivity does not make any contribution beyond the literal meaning, cf. discussion in section 3. So again, no inference of a correction or restatement relation.

(44) John DIDN'T praise BILL. He DID praise MARY.

Example (45) with focus on the object in the first utterance, and focus on the subject in the second, is curious because it would typically be used to correct someone claiming that John praised Mary. However, unlike correction in our sense, the sentences clearly present two distinct events of praising. Here the change in the focus-background partition indicates the change of topic question from *Who did John praise?* to *Who praised Mary?* Once again, distinct topics—no correction or restatement inference.

(45) John praised BILL. SUE praised Mary.

(46) $[max(\lambda x[praise(j, x)]) = b] \wedge [max(\lambda x[praise(x, m)]) = s]$

Finally, particles like *and*, *also*, *but*, and many others encode constraints that can override the topic continuity and/or exhaustivity default in various ways (Jasinskaja and Zeevat, 2008, 2009). The function of *also* in (47) is, roughly, to indicate that the foci *Bill* and *Mary* are *distinct* answers to the same question *Who did John praise?* But as we saw above, two exhaustive answers to the same question cannot be distinct. Thus, one has to assume that *Bill* and *Mary* are non-exhaustive answers, and exhaustivity only applies at the level of the whole discourse comprising two utterances.

(47) John praised BILL. He also praised MARY.

Coming back to corrections, one should note that the present approach predicts a correction reading for (48), cf. (49), just like it does for (50), and it does not predict any difference in felicity or markedness between these examples. However, (48) is intuitively much more marked than (50), whereas the “normal”, unmarked way to express the same idea would be by using a *not only... (but) also* type

construction, as in (51).

(48) John didn't praise BILL. He praised BILL and MARY.

(49) $\neg[\max(\lambda x[\textit{praise}(j, x)]) = b] \wedge [\max(\lambda x[\textit{praise}(j, x)]) = b \oplus m]$

(50) John didn't praise BILL. He praised MARY.

(51) John didn't only praise BILL. He also praised MARY.

Indeed, (48) has a much more metalinguistic feel to it than (50) or (51). Above we adopted a rather broad notion of metalinguistic negation, as negation that applies to an utterance of some linguistic material including its propositional content, presuppositions, implicatures, linguistic form, etc. Crucially, one of the components that can be negated metalinguistically is the propositional content of the expression, in which case metalinguistic negation does the same job as normal, descriptive negation (see Carston, 1996, for extensive discussion).¹⁴ The difference between (48) and (50) is that in (50) the propositional content is negated among other things, i.e. the intended interpretation of the first sentence is consistent with a descriptive negation reading. In (48), however, the speaker only intends the exhaustive implicature (i.e. that John didn't praise Mary, Sue, etc.) to be negated, whereas it remains true that John praised Bill. It is widely accepted (at least since Horn, 1989) that the default interpretation of negation is descriptive, which means that discourses like (48) garden-path the hearer into the wrong assumption that (in accordance with the descriptive reading) it is not the case that John praised Bill, which has to be given up after processing the second utterance and the first utterance has to be reanalysed as involving metalinguistic negation.¹⁵ On these assumptions, some reanalysis must also be involved in (50), i.e. the descriptive default reading of the negative utterance must be replaced by a metalinguistic reading in order to satisfy topic continuity (for reasons given in section 3), and ultimately, for the correction interpretation to become available. However, the amount of change this brings about is minimal as compared to (48). For one thing, the assumption that John didn't praise Bill need not be revised, and is even confirmed by the exhaustive interpretation of the second utterance. Finally, the presence of *only* in (51) precludes the unintended interpretation right from the start. In other words, the difference in markedness between these examples can be given an independent explanation.

¹⁴Metalinguistic negation in this broad sense does not necessarily apply to the appropriateness of the linguistic form, so as Carston (1996) suggests, a more appropriate term would be 'metarepresentational negation'.

¹⁵Such garden path effects have been considered a typical, or even an essential property of metalinguistic negation on some more narrow conceptions of this notion (Horn, 1989; Burton-Roberts, 1989)

In summary, the examples analysed in this section show how correction and restatement relations can be inferred in the absence of any explicit markers by applying the general pragmatic principles of exhaustivity and topic continuity. The inference is insensitive to the order of utterances, which reflects the symmetric property of these relations, and since pragmatics, at least as far as Gricean implicatures and coherence maximisation are concerned, is a universal mechanism, the inference is expected to be effective, in principle, in all languages. We have also shown some representative cases of how not to draw this inference. By and large, the utterances must contain some linguistic marking device that would override the effect of either exhaustivity or topic continuity. Correction and restatement, on the other hand, form a natural class in that they both can be properly unmarked.

5 Final remarks

One of the general characteristics of the approach developed in this paper is that it derives discourse relations (correction and restatement, in particular) from the implicatures associated with individual utterances and a coherence maximisation principle, that in contrast to Asher and Lascarides' (2003) MDC, does not make reference to discourse relations. For the present purposes, it was enough to define coherence exclusively at the level of discourse topics, or questions under discussion. In other words, the present proposal implements the idea that implicatures and discourse topics are primary concepts, while discourse relations are secondary, i.e. they are epiphenomenal effects of the former. This analytic strategy is opposite to the one taken by Asher (this issue) and Irmer (this issue), who, instead, consider discourse relations as basic theoretical constructs and take them as input to the computation of implicatures. Given that the interaction between discourse relations and implicatures still remains a rather underexplored issue, it is, perhaps, too early for serious critical comparison between these approaches, which focus on rather different sets of phenomena. However, it is worth noting that from the point of view of theoretical parsimony, the "implicatures first" approach developed in this paper has a certain advantage over the "discourse relations first" approach, since it operates with fewer basic concepts and principles. The maxims (Gricean or similar) that stand behind implicatures are few, self-explanatory, and intuitively sensible. Questions as discourse topics are a relatively well-understood and independently motivated concept, and a coherence maximisation principle that operates just on those is simpler than one that takes all kinds of links, including discourse relations, into account.¹⁶ In contrast,

¹⁶It is not clear that the reduction of coherence to maintenance of the discourse topic alone is really tenable. Anaphora and presupposition will most probably have to play a role of their own in it. However, the project of leaving discourse relations out seems less hopeless.

discourse relations are many and no one really knows how many because there are always different possible criteria and degrees of granularity in conceptualising their inventory. A set of concepts that is so badly defined is not such a good candidate for the set of elementary concepts, as it is implemented, for instance, in Asher and Lascarides (2003). There have been a number of attempts to reduce it to a set of more basic, independently motivated features and mechanisms (e.g. Sanders et al., 1992; Kehler, 2002), however, the issue is far from settled, and it is not unlikely that implicatures will show up among those more basic mechanisms, in which case we are back to “implicatures first”. In fact, this study makes a step precisely in that direction by showing how restatement and correction relations can be inferred from exhaustivity implicatures.

As a theory of correction, the present proposal (even though it was developed with primary reference to correction by juxtaposition in this paper) can be extended to cases that involve marking by *but*, *sondern*, etc. That is, the “replacive” effect that we find both in marked and unmarked cases, cf. *John didn’t praise Bill, but Mary* vs. *John didn’t praise Bill, he praised Mary*, is probably the result of the same inference based on the default principles of topic continuity and exhaustivity. One might wonder, of course, how topic continuity could be involved in this inference for the *but* cases, if, as we argued, *but* signals a break of topic continuity. The answer lies in the metalinguistic function of negation. On the one hand, the whole utterance containing metalinguistic negation is an answer to some question, which is a polar question of the form *Is “Bill” the right answer to the question “Who did John praise?”*?, as was argued in section 3. On the other hand, the utterance negated by the metalinguistic negation is the answer *Bill* to the question *Who did John praise?* It is the latter question that satisfies topic continuity with the subsequent positive utterance and gives rise to the inference of the replacive relation, and it is the former that realises the break of topic continuity that licenses the use of *but*. The fact that *but*-corrections differ from correction by juxtaposition in that they are asymmetric with respect to the position of negation (cf. discussion in section 1) can be explained on independent grounds which have to do specifically with the nature of *but* (see Jasinskaja, 2011). In other words, this paper describes how corrective readings are inferred not only for the unmarked case, but probably also for (at least some) markers. This is an interesting result, since corrective readings have proved rather difficult to accommodate in a unified account of markers like *but* (see discussion in Anscombe and Ducrot, 1977; Iten, 2000; Blakemore, 2002; Hall, 2004; Jasinskaja, 2011), let alone to provide a definite recipe for deriving these readings. If the extension to *but* sketched out here turns out to be tenable, it would provide a major part of a solution to a long-standing problem in the study of discourse markers.

In other words, the theory developed in this paper is not only an account of similarities between correction by juxtaposition and restatement, but also a po-

sition statement towards the place of implicatures and discourse relations in the architecture of pragmatics, as well as a contribution to a comprehensive theory of correction.

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