

Correction by Adversative and Additive Markers*

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1 Formalist vs. inferentialist theories of *but*

Among the most widely discussed uses of adversative markers, such as *but*, are *formal contrast* or *semantic opposition* uses, illustrated in (1); *argumentative* uses, as in (2); and *concessive*, or *denial of expectation* uses in (3).¹

- (1) This ring is beautiful, but that one isn't.
- (2) This ring is beautiful, but expensive.
- (3) This ring is beautiful, but we won't buy it.

In Kehler's (2002) classification of coherence relations these types of relations encoded by *but* belong to two different major classes. Formal contrast (1) is a *resemblance* relation: the central role in establishing resemblance relations is played by

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¹The latter two are closely related: in denial of expectation uses the second conjunct of *but* contradicts a conclusion suggested by the first conjunct, whereas in the argumentative uses, the conjuncts support two contradicting conclusions (cf. Anscombe and Ducrot, 1977). In this paper, we will mainly refer to argumentative uses, but mean them as representative of denial of expectation uses, as well.

“formal” similarities and differences between the conjoined sentences, i.e. those at the level of the logical form or some relatively close-to-surface semantic representation. Denial of expectation and argumentative uses belong to the class of *causal* relations, whose inference requires “deep” interpretation, massive recourse to world knowledge, particularly the knowledge of causal and inferential relations between events and facts. The distinction between resemblance and causal relations is fundamental and influences the use and interpretation of a whole range of linguistic devices, including pronouns, ellipsis and tense (Kehler, 2002).

Yet obviously, the relations in (1)–(3) must have a lot in common since they are encoded by the same marker in many languages. The idea to be developed in this paper is that this common thing is the contrast between “something positive” and “something negative” (Sanders et al., 1992; Knott and Sanders, 1998), but what it means to be “positive” or “negative” amounts to something different in each case: a positive and a negative statement in (1), an argument and a counterargument in (2), a trigger of an expectation and a denial of that expectation in (3). Existing generalised accounts of the function of *but* can be roughly divided into two groups depending on which end they start with. Approaches starting on the causal end—the “inferentialist” approaches, as we will call them since they appeal to world knowledge and deep inferential processing—take the denial of expectation (Foolen, 1991; Blakemore, 1989, 2002; Iten, 2000; Hall, 2004) or the argumentative function as basic (Anscombe and Ducrot, 1977; Merin, 1999; Winterstein, 2010) [and Winterstein this volume] deriving formal contrast as a special case. The other group of approaches (Sæbø, 2003; Umbach, 2004, 2005; Jasinskaja and Zeevat, 2008, 2009) defines the relationship between the conjuncts of *but* using the notion of information-structural alternatives, which has a most straightforward application to formal contrast uses of *but*,² while argumentative and denial of expectation uses are treated as special cases under additional assumptions.

The focus of this paper is on yet another type of use of adversative markers: the so-called *correction* uses illustrated in (4), which raise issues that bear in interesting ways on the formalist/inferentialist discussion.

(4) John *isn't* going to Paris, *but* to Berlin.

Correction uses proved to be rather difficult to accommodate in a unified theory of *but*. They are often entirely excluded from consideration as a truly distinct meaning of *but* on the basis of their deviant semantic and syntactic properties (e.g.

²Another group of approaches that take contrast as the basic meaning of *but* is represented by Rieber (1997), Fraser (1998) and Bach (1999), see Blakemore (2002) and Hall (2004) for critical discussion. One crucial difference between these approaches and the ones we refer to as formalist, including the one developed in this paper, is that in the latter *but* does not encode simple contrast, but contrast between “something positive” and “something negative”, in a sense to be clarified below.

Anscombe and Ducrot, 1977). In this paper, I will discuss a so far rather under-studied phenomenon, which, I will argue, speaks in favour of a unified account after all. Adversative markers establish an asymmetry between their conjuncts both in argumentative and in corrective uses. In argumentative uses, the second conjunct presents the stronger argument. In corrective uses, the first conjunct must contain negation, while the second conjunct is positive. In contrast, corrective uses of additive markers—in languages that generally use additive markers to express correction, e.g. Russian, or in languages where additive markers can appear in this function along with adversatives—do not show the same asymmetries. I will show that both asymmetries of *but* can be captured as manifestations of the same underlying property within a unified theory of this marker. The resulting theory clearly belongs to the formalist camp, and I will argue that only formalist type of analysis can adequately capture corrective and other uses of *but* in one theory. Section 2 presents the phenomenon of (a)symmetric correction, section 3 develops a theory of *but* that explains this phenomenon, whereas implications for a general theory of adversativity and additivity are discussed in section 4.

2 The phenomenon of (a)symmetric correction

Correction is, in our terminology, the relation between an expression that explicitly negates some contextually salient proposition, e.g. *John isn't going to Paris* in (5), and one that “replaces” the “wrong” part of that proposition by a “correct” element (*Berlin*):

(5) John *isn't* going to Paris, *but* to Berlin.

Many languages have specialised markers of correction, e.g. the German *sondern*, the Spanish *sino*, the Hungarian *hanem*, but there is also a large group of languages where correction is expressed by an adversative marker, e.g. the English *but*, the French *mais*. It turns out that such markers show an asymmetry with respect to the order in which the negative and the positive conjunct appear. Normally, the negative conjunct comes first, and the positive conjunct second, as in the English (5) and the German (6a). The reversal of conjuncts is usually either altogether impossible, cf. (6b),³ or leads to a slightly different interpretation as in the English example (7), which falls outside our notion of correction.

(6) a. Peter fährt *nicht* nach Paris, *sondern* nach Berlin.

Peter is going not to Paris CORR to Berlin

b. *Peter fährt nach Berlin, *sondern nicht* nach Paris.

Peter is going to Berlin CORR not to Paris

³This seems generally to be the case with specialised correction markers.

(7) John is going to Berlin, *but not* to Paris.

Whereas a proper correction such as (5) is appropriate in a context where the expectation is that John went (only) to Paris on a particular occasion, i.e. *Paris* is “replaced” by *Berlin* as the target of John’s travel on *that* occasion, (7) is more appropriate in a context where one would have expected John to go both to Berlin and Paris, or where going to Paris has a higher value on a scale than going to Berlin. In both cases, the effect is that John is doing “less” than was expected, i.e. the second conjunct of *but* has a restrictive rather than replacive function, and therefore does not instantiate correction. This “restrictive function” is not yet another use of *but*, but an effect that we typically find in formal contrast uses (Foolen, 1991; Umbach, 2005), cf. also (1).

A better way to express replacive correction in the positive-negative order in English (as well as in German and many other languages) is to use *and* instead of *but* (8a), or leave out the conjunction altogether (8b).

- (8) a. John is going to Berlin, *and not* to Paris.
- b. John is going to Berlin, *not* to Paris.

To put these intuitions in a somewhat more graspable format, the following can be used as a test for corrective vs. formal contrast (restrictive) readings of adversative and other markers: a sentence that has a corrective reading, such as (5), as well as (8a) and (8b), will be most appropriate as a reply to (9a). If the corrective reading is the only or the dominant one, the sentence will be much less appropriate after (9b) or (9c)—this is true for (5) and (8b), perhaps less so for (8a). Conjunctions with formal contrast readings will show the following pattern: if negation occurs in the second conjunct, as in (7), the most appropriate context is (9b). If negation is in the first conjunct, as e.g. in (10), then (9c) is a more appropriate context than (9b). Notice that the restrictive effect is reversed here: John is doing more than expected. It seems that regardless of the placement of negation, sentences with formal contrast readings are not so bad as a reply to (9a), although unlike pure corrections they seem to provide additional information that the speaker of (9a) did not “ask for”: after negating that John is going to Paris, they tell about a *different* event of John going to Berlin, while corrections still talk about the same event.

- (9) a. I thought John was going to Paris.
- b. I thought John was going both to Paris and to Berlin.
- c. I thought John was going neither to Paris and nor to Berlin.

(10) John *isn’t* going to Paris, *but* he is going to Berlin.

We will say that a correction marker is asymmetric if it shows the replacive

interpretation and the contextual pattern typical for correction markers only with the negative-positive order of conjuncts, while with the positive-negative order it is either ruled out altogether, or has a different interpretation, such as the formal contrast reading with the corresponding contextual pattern.⁴ Accordingly, a correction marker is symmetric if it has a replacive interpretation and generally behaves like a correction marker no matter which conjunct contains the negation.

The point that the discussion so far leads up to is that symmetric correction markers also exist, although they seem to be less common across languages. For example the Russian correction marker *a* (11) expresses a replacive relation regardless of the order of the negative and the positive conjunct. Both (11a) and (11b) are equally appropriate as a reply to (9a), and inappropriate after (9b) or (9c).

- (11) a. Oleg edet *ne* v Pariž, *a* v Berlin
Oleg is going not to Paris CORR to Berlin
 Oleg isn't going to Paris, but to Berlin.
- b. Oleg edet v Berlin, *a* *ne* v Pariž
Oleg is going to Berlin CORR not to Paris
 Oleg is going to Berlin, and not to Paris.

Among Slavic languages, Ukrainian and Bulgarian *a* seem to follow the same pattern.⁵ Among languages that are neither related nor in contact with Russian, the Japanese converb marker *-te/-de* appears to be symmetric in the same sense in its corrective uses, cf. (12).

- (12) a. tyuumonsi-ta-no-wa koohii-de-wa-naku-te kootya-desu
order-PRF-NOM-TOP coffee-COP-TOP-NEG-CORR tea-COP
 What I ordered is not coffee, but tea.
- b. tyuumonsi-ta-no-wa kootya-deat-te koohii-de-wa-nai
order-PRF-NOM-TOP tea-COP-CORR coffee-COP-TOP-NEG
 What I ordered is tee, and not coffee.

The crucial characteristic that distinguishes these markers from the asymmetric correction markers like English *but* or French *mais*, is that they are not ad-

⁴It would be logical to call correction markers restricted to positive-negative order asymmetric as well, but to the best of my knowledge such markers do not exist. Expressions like the English *A rather than B* or *A instead of B* come close, since they are replacive and encode the correct information in *A* and the information to be replaced in *B*. However, *B* does not contain overt negation. Correction markers in our narrow definition that require overt negation in the second conjunct do not seem to be attested in natural languages.

⁵Lithuanian *o* and Chechen *t'qa* are further likely candidates since they combine a corrective function with an additive function in one marker, while using a different marker for the core adversative functions 'denial of expectation' and 'formal contrast' (Mauri, 2008).

versative in their other uses. That is, they do not have argumentative and denial of expectation uses like (2) and (3) which we normally find with adversatives. They normally do have formal contrast uses (or rather, what looks very much like formal contrast, see Jasinskaja, 2010, on the distinction between ‘contrastive comparison’ and ‘opposition’), as well as ‘atemporal combination’ uses (Mauri, 2008), i.e. conjoining states of affairs where the temporal order is not at issue—this usually excludes narrative uses like *John fell and broke his leg*, where the temporal order of events is inferred from the textual order of conjuncts. Moreover, Japanese *-te/-de* can be used to encode all combination types, including temporal combination according to Mauri (2008, p. 219), which comes rather close to the coverage of the English *and*. In other words, the generalisation that suggests itself is that symmetric correction markers come from the pool of additive markers, while corrective uses of adversative markers are asymmetric. The next section sets out to explain this phenomenon.

3 Explaining the (a)symmetries

It is well known that adversative markers like *but* show asymmetric behaviour in their argumentative uses: the stronger argument is always given in the second conjunct (Anscombe and Ducrot, 1977):

- (13) a. The ring is beautiful, *but* it’s expensive. [So we shouldn’t buy it.]
b. The ring is expensive, *but* it’s beautiful. [So we should buy it.]

The core idea of our proposal is that the asymmetries that we observe in the corrective uses of adversative markers are related to this argumentative asymmetry. We will return to this issue in section 3.4 where we will discuss some arguments for and against this basic assumption. The main goal of this section is to develop a theory of adversative and additive markers that would predict their (a)symmetric behaviour in corrections, linking the corrective and the argumentative asymmetry of *but* under a uniform explanation. Section 3.2 discusses the possibility of applying the argumentative approach along the lines of Winterstein (2010) to this problem. Section 3.3 develops a solution within the question-based approach of Jasinskaja and Zeevat (2008, 2009) and Jasinskaja (2010). But first (section 3.1) it is useful to have a brief look at unmarked corrections like (8b) in the previous section, i.e. corrections expressed without either *but* or *and*, in order to discern the role of the marker from the contribution of the conjuncts and general pragmatic principles.

3.1 Unmarked correction

A detailed study of unmarked correction, which is by the way very clearly symmetric, cf. (14), is presented in Jasinskaja (DGfS). Here we only point out some of its properties that will help us understand corrections by *but* and *and*.

- (14) a. John is *not* going to Paris. He is going to Berlin.
b. John is going to Berlin. He is *not* going to Paris.

To begin with, notice that it is not necessary to use a corrective construction in order to correct, for instance, another speaker's suggestion.⁶ The positive sentence is generally sufficient, cf. (15). One can also only use the negative sentence to contradict the same claim, cf. (16), however there is a strong intuition that B's reply in (16) provides less information than that in (15).

- (15) **A:** I thought John was going to Paris
B: He is going to BERLIN

- (16) **A:** I thought John was going to Paris
B: He is not going to Paris.

One way to account for this observation (also developed in Jasinskaja, DGfS) is to assume that the positive sentence in (15B) is interpreted exhaustively with respect to the question *Where is John going?*, which amounts to saying that John is going to Berlin and no other place. From this it follows that he is not going to Paris. Contrastive focal stress on *Berlin* is usually seen as an argument for this kind of analysis (Steube, 2001). In (16B), the negative sentence can be either taken to answer an implicit *yes/no*-question like *Is John going to Paris?*, or the same kind of *wh*-question as in (15): *Where is John going?* (presumably depending on whether the main stress is on the negative particle or on *Paris*, 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, (16B) strictly follows from (15B) when exhaustivity is taken into consideration.

The same considerations apply to the negative and the positive part of corrective constructions like (14). 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

⁶We have to do with two different uses of the term *correction* here. Example (15) illustrates correction as a speech act—a relation between the incorrect and the correct utterance, usually by different speakers (Steube, 2001; Asher and Lascarides, 2003). In contrast, the corrective construction, or the way we have been using the term *correction* so far, is a relation between an utterance that negates an incorrect utterance, and the correct utterance that replaces the negated information, cf. (14).

corrected in cases where the target of correction is not as salient in the context as in (15) and (16), or in the case of ambiguity:

- (17) **A:** I thought John was going to Paris and Madrid.
B: a. He is not going to either. He is going to Berlin.
b. He is not going to Paris. He is going to Berlin.
[John is going to Berlin and Madrid.]

The relative strength of the positive and the negative part, and the function of the negative part to indicate which part of the previous context is being corrected also explains the preference for the negative-positive order as more natural from the point of view of discourse dynamics: weaker statement first, more specific statement second; contextual link first, new information second. So it is not surprising that the absolute majority of correction markers across languages are restricted to this order of presentation, markers restricted to the reverse order do not seem to exist, and symmetric markers occur much more frequently with negative conjunct first and positive second, than the other way round, as shown by the corpus study reported in Jasinskaja (FDSL): 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.

As explained in Jasinskaja (DGfS), the replacive interpretation of juxtaposed negative and positive sentences like (14) results from applying general pragmatic default principles of exhaustive interpretation—by default, a sentence is interpreted exhaustively with respect to the question it addresses—and topic continuity—by default, a sentence answers the same question as the previous sentence (Jasinskaja, 2007). Assuming that both sentences in (14) address the question *Where is John going?*, the exhaustive interpretation of the negative sentence gives us that the place John is going to is not Paris, while that of the positive sentence is: the place John is going to is Berlin. Thus Paris is “replaced” by Berlin in the description of the maximal relevant event of John going to place X.

Since exhaustivity and topic continuity are general pragmatic constraints that apply by default, in principle, no special marking is needed to express correction. One might wonder why we have correction markers at all if this is so. One reason could be that unmarked correction is restricted in embedded contexts:

- (18) a. I doubt that John didn't vote for McCain, *but* for Obama.
b. # I doubt that John didn't vote for McCain, for Obama.
c. # I doubt that John didn't vote for McCain, he voted for Obama.
d. I doubt that John didn't vote for McCain. I doubt that he voted for Obama.

It has often been observed that the development of written language is a powerful

factor that puts evolutionary pressure on the development of coordinating conjunction systems (Mithun, 1988). Presumably, the need to express various kinds of coordinating relations, including correction, under embedding is motivated by the more complex hierarchical organisation of written discourse. In fact, there are a number of languages, especially among unscripted languages of the world, or languages with a relatively young written tradition, which do not have correction markers and generally use plain sentence juxtaposition (e.g. Wari’, Lango, according to Mauri, 2008). There are also languages like Georgian where the use of an explicit correction marker (*aramed*) is restricted to official and bookish style, while the normal and the most frequent way of expressing correction is without marking (Mauri, 2008). Finally, correction markers are rather frequent in English and most other languages of Europe, but they co-exist with unmarked correction which is more typical for spoken language. In other words, the general tendency in the distribution of unmarked vs. marked correction seems to be: unmarked/spoken vs. marked/written, while the degree of grammaticalisation of correction markers and their overall frequency of use has a lot to do with the literary history of the language.

3.2 An argumentative theory of (a)symmetric correction?

Above we formulated the idea that the asymmetric pattern characteristic of adversative markers in corrections is a manifestation of the same underlying constraint as their argumentative asymmetry. The argumentative behaviour of *but* is (not surprisingly) most naturally treated within the argumentative approach of Anscombe and Ducrot (1977); Merin (1999); Winterstein (2010). In Merin’s probabilistic formalisation of the approach, the central role is played by the measure $r_H(\phi)$ —the argumentative force of proposition ϕ with respect to a hypothesis H , which is positive ($r_H(\phi) > 0$) if ϕ “argues for” H , that is, the probability of H after learning ϕ is higher than before learning ϕ , and negative if ϕ “argues against” H (or for $\neg H$), that is, ϕ lowers the probability of H and raises the probability of $\neg H$. If ϕ gives a stronger argument for H than ψ does for I , then $r_H(\phi) > r_I(\psi)$. Winterstein’s (2010) formulation of the function of *but* (in fact, the French *mais*, but per null hypothesis the difference does not matter) is given in (19):

- (19) ϕ *but* ψ :
- a. Orientation: $r_H(\psi) < 0 < r_H(\phi)$
 - b. Force: $r_H(\phi) < r_{\neg H}(\psi)$

The orientation condition (19a) says that ϕ and ψ argue in different directions, i.e. there is a salient hypothesis H , such that the argumentative force of ϕ is positive with respect to H , whereas the argumentative force of ψ is negative, or put differently, $r_H(\phi) > 0$ and $r_{\neg H}(\psi) > 0$, i.e. ϕ argues for H , whereas ψ

argues for $\neg H$. The force condition in (19b) says that the second conjunct ψ gives the stronger argument, i.e. ψ is a stronger argument for $\neg H$ than ϕ is for H .⁷ The second condition implements what we have called argumentative asymmetry. Winterstein (2010) develops an extension of this approach to formal contrast uses of *but*, by assuming that certain kinds of hypotheses are made automatically salient by the information structure of the conjuncts. These include the so-called H_{other} and H_{unique} : for example, in (20a) the use of *but* is justified by the assumption that the first conjunct argues for the hypothesis that Lemmy plays the bass as well as some *other* instruments (H_{other}), i.e. H is the conjunction of the conjunct itself *Lemmy plays the bass* and some (or all) of its information-structural alternatives *Lemmy plays the guitar, the piano, etc.* The second conjunct in (20a) argues against this hypothesis, so the orientation condition is satisfied.⁸ In (20b), the relevant hypothesis H_{unique} is *Lemmy plays the bass and nothing else*, i.e. the conjunction of *Lemmy plays the bass* and the *negation* of its information-structural alternatives. (But see Winterstein, this volume, for a first-hand introduction.)

- (20) a. Lemmy plays [the bass]_F, but not the guitar.
 b. Lemmy plays [the bass]_F, but he also plays the guitar.

Winterstein (2010) does not attempt to extend this analysis to the corrective uses of *but*.⁹ In what follows we try to formulate such an extension to see if it will give us a unified account of the asymmetry in argumentative and corrective uses.

The problem amounts largely to finding a suitable hypothesis H . From the point of view of relevance in discourse the best motivated argumentative goals are perhaps (a) John is going to Paris (and only to Paris on the particular relevant occasion), and (b) John is going (only) to Berlin (on that same occasion). At least, these are the propositions that represent the point of disagreement (actual or potential) between the speakers. However, on the assumption (made in the previous section) that the contribution of the positive part of a correction, i.e. the second conjunct of *but* in (21), is to be taken to include its exhaustive strengthening, i.e.

⁷The original idea behind (19) is due to Anscombe and Ducrot (1977), first formalised by Merin (1999). Winterstein's formulation of the lexical contribution of *but* does not significantly differ from that of his predecessors. We nevertheless use Winterstein's study as our main reference point in this paper, since it extends Merin's formal approach to a broader range of uses of *but*, as well as to additive markers.

⁸The same idea is implemented in the analysis of formal contrast uses of *but* in approaches that start from denial of expectation (Foolen, 1991; Blakemore, 1989, 2002). In Blakemore's (2002) formulation, contrastive *but* denies the expectation that there is no contrast. That would mean for the example (20a), that proposition introduced by *but* goes against the assumption that the bass and the guitar are alike in their property of being played by Lemmy.

⁹In fact, Anscombe and Ducrot (1977) maintain the view that corrective uses of *mais* are truly distinct and do not involve argumentation, and Winterstein (2010) seems to make the same assumption.

the place John went to (on the relevant occasion) is Berlin (and nothing else), both conjuncts in (21) argue in the same direction, i.e. both against ‘John is going to Paris’, and both for ‘John is going to Berlin’, so the orientation condition is violated.

(21) John *isn't* going to Paris, *but* to Berlin.

Another possibility is to assume that $H =$ ‘John isn’t going anywhere’, or ‘John isn’t going to Paris and other places, including Berlin’. In fact, this looks like a perfectly well-formed H_{other} , and moreover, it satisfies both the orientation and the force condition: John isn’t going to Paris is a weak argument in favour of the hypothesis ‘John isn’t going anywhere’, and John is going to Berlin is a knock-down argument against that hypothesis. However, there are two problems with this assumption. First, this is the H that according to Winterstein’s analysis licenses the formal contrast use in (22). This is not by itself inconsistent, but it means that the difference between the formal contrast in (22) and correction in (21) cannot be accounted for by the choice of H .

(22) John *isn't* going to Paris, *but* he is going to Berlin.

Second, and more importantly, the negative conjunct in corrections like (21) often, and in some languages preferentially, or even obligatorily, contains linguistic devices that bear a presupposition that John is going to some place. In English this can be expressed by a cleft construction *it is not Paris that John is going to* (see also the Japanese example (12) in section 2), or by contrastive stress on *Paris*: John is not going to [PARIS]_F. Russian implements a strong preference for the use of *constituent* negation in corrective sentences, that is, the negative particle immediately precedes the ‘negated constituent’, i.e. the PP ‘to Paris’ in the Russian translation of (21), cf. (11) in section 2, whereas the normal sentential negation requires the negative particle to appear immediately before the finite verb (Babby, 1980). The semantic difference between the two types of negation is precisely in the presupposition associated with constituent negation, that is: the positive, non-negated part of the sentence holds (Borshev et al., 2006; Jasinskaja, 2010), i.e. there is a place that John is going to, in a correction like (21). This suggests that the proposition that John is going somewhere is normally a settled fact among the speakers and not under dispute in such cases.

Finally, H can be constructed as something like ‘John is going to some place other than Paris and Berlin’. This hypothesis would satisfy both the orientation and the force condition, and it would be consistent with the presupposition that John is going somewhere. However, it is hard to see how this hypothesis could be activated by default from the first conjunct and its information structure alone. It does not meet the definition of either H_{other} or H_{unique} in Winterstein’s theory,

and it is hard to think of another reasonably simple operation that could derive ‘John is going to some place other than Paris and Berlin’ from ‘John isn’t going to Paris’, for which one could plausibly claim that it belongs to the accepted set of defaults along with H_{other} and H_{unique} .

Also, the hypothesis ‘John is going to some place other than Paris and Berlin’ does not look like a proposition that we would normally expect to be salient in contexts in which corrections like (21) are made. Moreover, if it were made salient by explicit mention in the previous context, e.g. by another speaker’s utterance like (23), the correction (21) would be infelicitous as a reply to (23), while the formal contrast (22) would be fine. In fact, the same observation applies to the candidate H discussed above ‘John is not going anywhere’, and to make things worse, this will hold for *any* H that satisfies the orientation condition. This shows that the first conjunct *but* in corrections is simply not a concession to the opposite view and does not argue in a different direction.

(23) I thought John was going to some place other than Paris and Berlin.

In other words, the crucial ingredient of the argumentative approach to adversativity—the constraint that the conjuncts of *but* argue in opposite directions—systematically fails on corrections. To maintain the argumentative view would therefore mean to go along with Anscombe and Ducrot’s assumption that corrections are an entirely different kind of animal, and to give up the idea of giving a uniform account of argumentative and corrective uses of *but* in general, and its argumentative and corrective asymmetry in particular.

It might seem that this problem could be solved if the orientation condition were weakened, e.g. if the second conjunct of *but* is required to argue against some hypothesis H , but there is no complementing requirement for the first conjunct. In fact, such proposals have been made. For example, Blakemore (2002, pp. 108–112), as a reaction to arguments presented by Iten (2000) amounting largely to the same point as those presented in this section, maintains that the utterance following *but* (i.e. the second conjunct) must “contradict and eliminate an assumption manifest to the hearer”, but does not impose any requirement that the immediately preceding utterance (or the first conjunct of *but*) be in any way “positive” with respect to that same assumption, or, in Blakemore’s terms, there is no requirement that the assumption contradicted by the second conjunct of *but* is made manifest by its first conjunct. In corrections, both conjuncts of *but* “contradict and eliminate” the same assumption. Blakemore develops the idea that it is the formal parallelism between the conjuncts (which ultimately leads to the ellipsis of the repeated material in the second conjunct, characteristic of corrections) that licenses the inference that both conjuncts are doing the same job. However, it remains unclear why this possibility is ruled out in the absence of formal paral-

lelism and ellipsis. For example, we seem to have no difficulty to interpret (25a) as contradicting (24). The inference is supported by world knowledge and presumably by the particle *well*, too.¹⁰ Why can't we continue with *but he is tall* as in (25b)? Obviously, formal parallelism is not needed here to license the inference that the first conjunct of *but* "contradicts and eliminates" the same assumption, it does so for independent reasons. So if the semantics of *but* does not encode a constraint that (under normal circumstances) forbids both conjuncts to contradict the same assumption, it remains unexplained why *but* is inappropriate in this example, whereas *and* is perfect.

(24) I don't want John in our basketball team.

(25) a. Well, he is an excellent player.

b. Well, he is an excellent player, and / # but he is tall.

For reasons given, we will give up further attempts to develop the argumentative theory into a general theory of *but*. The next section presents an alternative proposal, where argumentative force of utterances still plays an important role, but only for some, and not all of the uses of adversative markers.

3.3 Correction in a question-based setting

In this section we first briefly recapitulate the approach to adversative markers developed in Jasinskaja and Zeevat (2008, 2009) and its application to correction by Jasinskaja (2010). Then the asymmetry of adversative markers in argumentative and corrective uses is addressed in detail, as well as the lack of such asymmetry with additive markers and in the unmarked case.

The general outline of the approach: The central idea in Jasinskaja and Zeevat (2008, 2009) is that additive and adversative markers like *and* and *but* convey information about the discourse topics addressed by the clauses they connect, where discourse topics are represented as questions (under discussion, QUD) along the lines of e.g. Roberts (1996) and Büring (2003). Questions are represented as sets of Hamblin-style alternatives (Hamblin, 1973), e.g. the question *Who smokes?* corresponds to the set of mutually compatible possible answers {*John smokes, Mary smokes, Bill smokes, ...*}. Specifically, the conjuncts of *but* must give *distinct* answers to a so-called "*wh-whether*" question: a question whose one variable is a normal *wh*-variable, and the other is a *yes/no*-variable as in a polar question. This applies in the most straightforward way to formal contrast uses that contain explicit negation like (1), and (26) below:

¹⁰Instead of *well* one could have used another *but* here, or an explicit *I disagree*. This does not affect the point.

(26) John likes football, *but* Bill doesn't.

The corresponding question alternatives are given in (27), on the assumption that the *wh* variable ranges over John and Bill, and the *yes/no* variable ranges over negation and a corresponding “positive polarity” operator—an identity function of the same logical type as negation. The distinctness condition requires that the instantiations of both variables be distinct in the conjuncts of *but*. Distinct instantiation of the *yes/no*-variable is what accounts for the switch in polarity.

(27) $\left\{ \begin{array}{l} \text{John likes football} \\ \text{John doesn't like football} \\ \text{Bill likes football} \\ \text{Bill doesn't like football} \end{array} \right\}$

A special case of a *wh-yes/no*-question, is a *why-yes/no*, or *why-whether* question, as we used to call it. The *why* variable brings in the causal (in a broad sense, Sweetser, 1990), or the argumentative dimension. For example, in (28) the question is *why “whether” we should buy this ring* with alternatives shown in (29). The \Rightarrow symbol should be read as an “argument for” relation and could be defined in terms of argumentative force as in (30). This type of question can be represented schematically as $?X?\xi[X \Rightarrow \xi H]$ using Groenendijk and Stokhof (1984) notation style for *wh*-questions, where X is a variable that ranges over possible arguments, ξ ranges over \neg and no negation,¹¹ and H is the argumentative goal of the discourse in the same sense as in the argumentative approaches of Merin (1999) and Winterstein (2010), cf. section 3.2. Distinctness with respect to the *yes/no*-variable implies that one argument has to be for H and the other for $\neg H$. In other words, we reconstruct the argumentative orientation condition.

- (28) a. The ring is beautiful, *but* it's expensive. [So we shouldn't buy it.]
 b. The ring is expensive, *but* it's beautiful. [So we should buy it.]

(29) $\left\{ \begin{array}{l} \text{this ring is beautiful} \Rightarrow \text{we should buy it} \\ \text{this ring is expensive} \Rightarrow \text{we should buy it} \\ \text{this ring is beautiful} \Rightarrow \neg \text{we should buy it} \\ \text{this ring is expensive} \Rightarrow \neg \text{we should buy it} \end{array} \right\}$

(30) Definition of \Rightarrow , the “argument for” relation:

$$\phi \Rightarrow H \text{ iff } r_H(\phi) > 0$$

In corrections such as (31), the question is again a simple *wh-yes/no* without an

¹¹It is not standard to use the same notation for *yes/no*-questions. The standard way to represent a question *whether H* is $?H$ rather than $?\xi[\xi H]$. We use the deviant notation here in order to highlight the parallel fashion in which *wh*-variables and *yes/no*-variables are treated in the present framework.

argumentative dimension: *where* “*whether*” *John is going* (32): *Where isn’t John going?* – he isn’t going to Paris; *Where is John going?* – he is going to Berlin (see Jasinskaja, 2010). The requirement that the instantiations of the *yes/no*-variable be distinct ensures that one conjunct is positive, while the other contains *syntactic* negation (Anscombe and Ducrot, 1977)—this concerns simply the presence vs. absence of negation in the logical form of the alternatives, whereas their argumentative direction is irrelevant.

(31) John *isn’t* going to Paris, *but* to Berlin.

(32) $\left\{ \begin{array}{l} \text{John is going to Paris} \\ \text{John isn’t going to Paris} \\ \text{John is going to Berlin} \\ \text{John isn’t going to Berlin} \\ \text{John is going to Madrid} \\ \text{John isn’t going to Madrid} \end{array} \right\}$

In sum, the present approach predicts that one conjunct of *but* has to be positive, while the other has to be negative, but what it means to be “positive” and “negative” depends on the form of the topic question. If the question involves an argumentative dimension, then being positive vs. negative means to be an argument and a counterargument with respect to some salient hypothesis *H*. If no argumentative dimension is involved, “negative” simply means negative in the syntactic sense.

This approach is not without loose ends, of course. For instance, the status of examples like (33) and (34) is not quite clear. Such examples are standardly treated as cases of formal contrast. In Jasinskaja and Zeevat (2008) we analysed them as *wh-yes/no*, along the same lines as (26). However, unlike the formal contrast in (26), and unlike correction, no syntactic negation is present here. In (33) some pragmatic reasoning is needed to map *Bill likes basketball* to the underlying question alternative *Bill doesn’t like football*, and in (34) some lexical decomposition is needed to get from *he skipped the washing up* to *he didn’t do the washing up*. However, no such tricks are allowed in corrections, where syntactic negation is required categorically, cf. the classical example (35). In other words, if we want *wh-yes/no* to account for this requirement in corrections, then we should also expect literal matching between the conjuncts and the question alternatives in the case of formal contrast, in which case (33) and (34) cannot be accounted for as instances of formal contrast and require an argumentative dimension in the question.

(33) John likes football, *but* Bill likes basketball.

(34) John cleaned up his room, *but* he skipped the washing up.

- (35) a. It's *not* ambiguous, *but* vague. [correction]
 b. It's *unambiguous*, *but* vague. [contrast]

A possible way to approach this puzzle is to treat (33) and (34) as “hybrid” cases. In (33), for instance, the overt material in the conjuncts literally matches alternatives of a double-*wh* question *Who likes what?* (which accounts for the contrastive topic-focus structure of the example), while the *yes/no*-variable that licenses the use of *but* could appear only at the level of the argumentative goal *H*. The topic question could be represented as $?x?y?\xi[[x \text{ likes } y] \Rightarrow \xi H]$, where *x* and *y* are the two *wh*-variables, ξ is the *yes/no*-variable, and *H* is presumably ‘John likes football and Bill likes football’, i.e. Winterstein’s H_{other} . We will not develop this idea any further here, but finally turn to the issue of argumentative and corrective asymmetry.

The asymmetry of adversative markers: The above section only presents the part of the analysis that captures contrastiveness of adversative markers, corresponding to the orientation condition in the argumentative approach, cf. section 3.2, but not the asymmetry, i.e. the force condition. In Jasinskaja and Zeevat (2008, 2009) the decisive character of the second conjunct in the argumentative uses of *but* was captured as a requirement that the second conjunct *resolve* the *yes/no*-issue associated with the *why-yes/no*-question (feature 2ND in Jasinskaja and Zeevat, 2009). For example, in (28) the *why-yes/no*-question is *Why “whether” we should buy this ring?*, cf. (29), and the *yes/no*-question is simply *Should we buy this ring?* More generally, if the question that licenses the use of *but* is $?X?\xi[X \Rightarrow \xi H]$, then the question that must be resolved by the second conjunct is $?\xi[\xi H]$, or simply $?H$, i.e. whether *H* holds. Obviously, given that a *but*-conjunction *A but B*, gives an argument both for and against *H*, the $?H$ question can only be resolved by the stronger argument.

This idea can be extended to corrective uses if the condition is formulated in a bit more general terms: The second conjunct of *but* must *resolve* a contextually salient *question under dispute*. Intuitively, this is the question on which the speaker and the hearer hold distinct positions, or on which the speaker anticipates disagreement from the hearer.¹² Obviously, the point of disagreement in argumentative uses is whether *H* holds, i.e. whether we should buy the ring, in (28). In corrections like (31), however, the (actual or anticipated) mismatch between the speaker’s and the hearer’s representation of the world concerns the question *Where is John going?*

This raises the question of the relationship between the topic question and the

¹²We will not repeat Anscombe and Ducrot’s argument that in order to license the use of such markers as *but* the disagreements that their semantics refers to need not be real, but can also just be possible or even counter-factually hypothesised by the speaker.

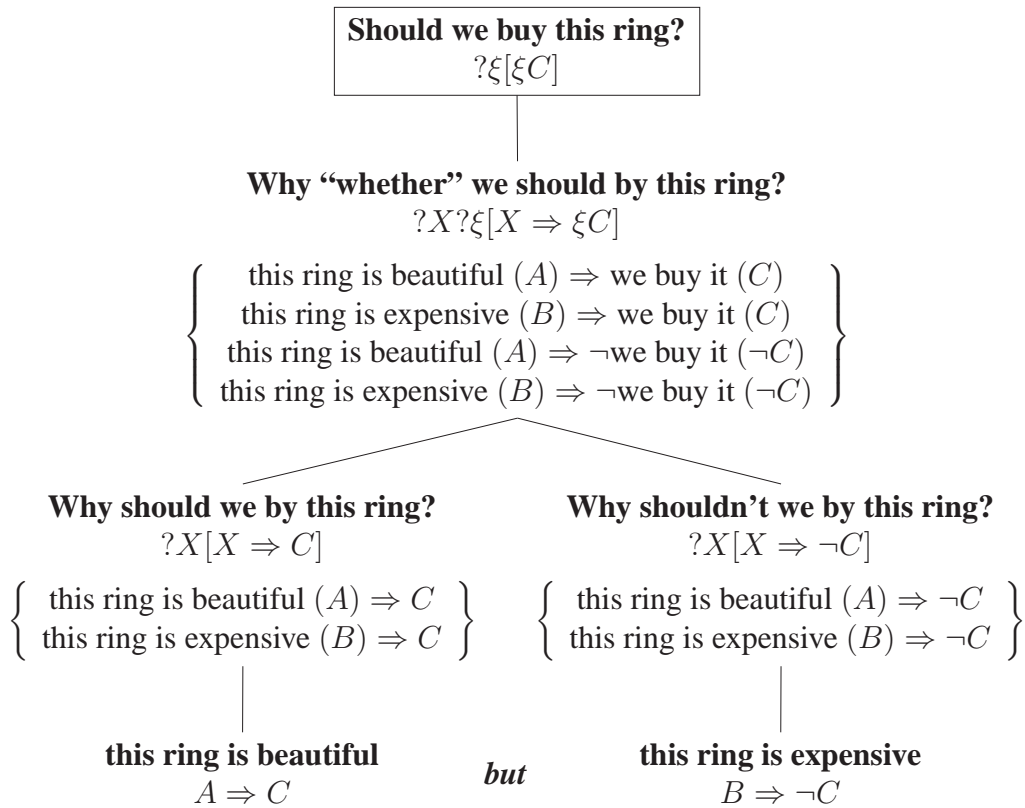


Figure 1: The question under dispute: Argumentative uses of *but*.

question under dispute. The issue really requires much more attention than it can be given in this paper. At this point we could say perhaps that the question under dispute represents (an aspect of) the speaker’s model of the hearer and the communicative situation involving both of them, particularly the relationship between the speaker’s and the hearer’s mental state. In contrast, the topic question represents the speaker’s strategy, or plan, to address the question under dispute, or more generally, issues of common interest between communication participants. The topic question is rather a question or series of questions that the speaker asks herself to help herself get through the complex communicative task she is facing. The speaker can indicate to the hearer, for instance by the use of adversative markers, what kind of questions she is addressing, but the topic question in this sense is essentially the speaker’s responsibility. In Figures 1 and 2, which show the question-based discourse structure of argumentative contrast (28) and correction (31), questions under dispute are represented in boxes.

Coming back to the asymmetry issue, it is easy to see why the positive conjunct has to come second in *but*-marked corrections. Under exhaustive interpretation with respect to the question under dispute (and it is the exhaustive inter-

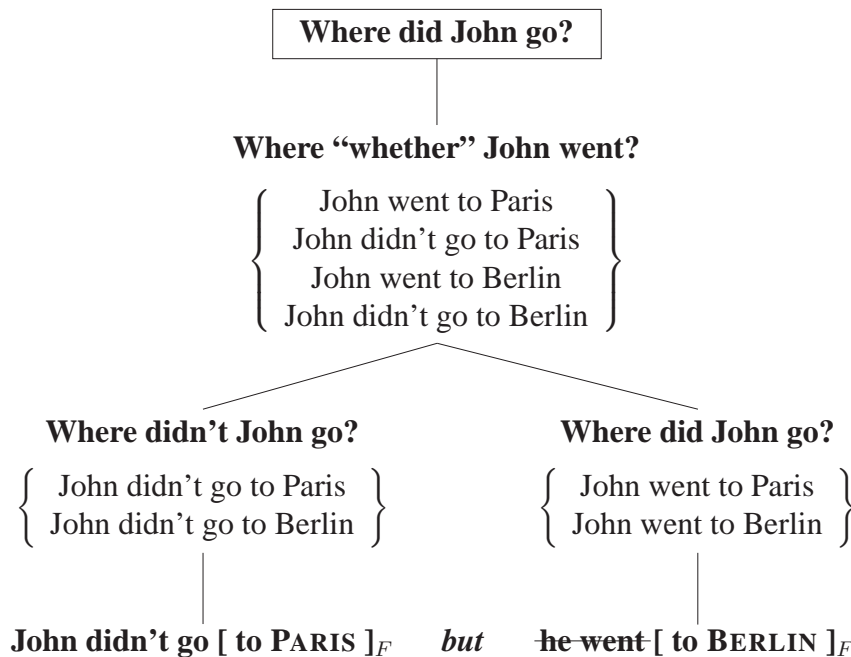


Figure 2: The question under dispute: Corrective uses of *but*.

pretation that we should consider here, as argued in section 3.1 and in Jasinskaja, DGfS), the positive conjunct resolves that question: *John is going to Berlin* (and nowhere else) resolves the issue where John is going. In contrast, the negative conjunct *John isn't going to Paris*, when interpreted as answer to the positive *wh*-question *Where is John going?* only gives rise to an interpretation that excludes *Paris* from the set of places John will possibly go to, but leaves it open whether John is going to Berlin, Madrid, Oslo, etc.¹³ In other words, under normal circum-

¹³There is a potential caveat here. The stated absence of exhaustive strengthening in the negative conjunct *John isn't going to Paris* is based on the assumption that it is interpreted as an answer to the positive question *Where is John going?*—the question under dispute (Schulz and van Rooij, 2006; Spector, 2005). But is this assumption justified? As Figure 2 shows, the topic question immediately dominating the negative conjunct is a negative *wh*-question *Where isn't John going?* Exhaustivization with respect to that question would give that John is going to all other relevant places except Paris, which is obviously wrong. On the other hand, it is most natural to assume that the question primarily responsible for exhaustivity implicatures of sentences in discourse is the most local topic question, so why the negative conjunct in *but*-marked corrections deviates from this pattern needs an independent explanation. Notice that this problem does not arise in unmarked corrections (cf. section 3.1) since there is no *but* to indicate the presence of a *wh*-yes/no strategy, the negative and the positive part are interpreted directly with respect to the positive question under dispute.

We cannot offer a fully fledged solution yet, but it should be noticed that corrections show exceptional behaviour also in another way, discussed in detail in Jasinskaja (2010). Normally, the topic structure like that in Figure 2 implies that the polarity exponents of the conjuncts should be

stances (i.e. when the alternative set contains more than two relevant alternatives), the negative conjunct does not resolve the question under dispute.

Finally, as the last small improvement, instead of defining the force condition in terms of categorical resolution of the question under dispute, it might be more adequate to define it in probabilistic terms along the lines of the argumentative approach. (Indeed, what if the other speaker is not convinced by the argument or does not accept the correction, so the question remains unresolved?) One can replace resolution by relative informativity: the second conjunct of *but* must be *more informative* with respect to the question under dispute, where ϕ is more informative than ψ with respect to a question Q if it establishes a clearer preference for one cell in Q 's partition of the common ground than ψ does. That is, suppose A_1, \dots, A_k are full, resolving answers to Q (i.e. propositions corresponding to cells in the partition of the common ground established by Q , cf. Groenendijk and Stokhof, 1984) for which ϕ is a positive argument, i.e. for each A_i in $\{A_1, \dots, A_k\}$, $r_{A_i}(\phi) > 0$. Suppose also that $\{B_1, \dots, B_m\}$ is the corresponding set for ψ .

- (36) ϕ is more informative than ψ with respect to a question Q iff
 there is $A_i \in \{A_1, \dots, A_k\}$ such that for all $B_j \in \{B_1, \dots, B_m\}$ holds
 $r_{A_i}(\phi) > r_{B_j}(\psi)$

That is, there is an answer for which ϕ presents a stronger argument than ψ does for any answer it argues for. If Q is a *yes/no*-question (as in the argumentative uses of *but*) with only two cells H and $\neg H$ then it is easy to see that the proposed formulation boils down precisely to Winterstein's force condition. If there are more than two cells, as is normally the case in *wh*-questions associated with corrections, positive answers always turn out to be more informative than negative ones under exhaustive interpretation, so we predict once again that the positive conjunct must appear second.

This is the reason why the corrective reading of *but* is not available in (37). Under the assumption that the question under dispute is *Where did John go?*, the second conjunct is less informative than the first, i.e. the force condition is not satisfied. However, if the question under dispute is *Did John go both to Berlin and*

marked as contrastive topics (cf. Büring, 2003), however this never happens in corrections, they only have foci on instantiations of the *wh*-variable (i.e. *Paris* and *Berlin*), the negative particle is optionally stressed (normally unstressed), while the positive polarity exponent may not be stressed, moreover, may not be present in the positive conjunct. If it is present, as in *John doesn't like football, but he does like basketball* the corrective reading is lost, and the contrastive reading comes in its place. In other words, both information structure and accentuation, and the exhaustivity effects are consistent with the assumption that both conjuncts are processed as answers to the positive *wh*-question, whereas the presence of the negative topic question that immediately dominates the negative conjunct seems to be ignored. Still, we cannot completely dispense with that question in our theory of *but*-corrections since it is the one that accounts for the requirement of explicit syntactic negation in the first conjunct. For the time being, this remains a puzzle for the future.

Paris? then the negative conjunct is more informative than the positive one, since falsifying one conjunct is enough to falsify the whole conjunction, whereas verifying one conjunct is not enough to verify a conjunction. Thus a formal contrast reading is predicted for this example.

(37) John is going to Berlin, *but not* to Paris.

Next, we will see why the corrective reading in (37) comes back if *but* is replaced by *and*, and why the Russian correction marker *a* does not show the same asymmetry as the English *but*.

The symmetry of additive markers and unmarked correction: The answer to the question why additive markers and unmarked juxtaposition of sentences are symmetric in their corrective uses is very simple: because they do not encode a force constraint. Unmarked juxtaposition of sentences, obviously, does not encode anything whatsoever. The corrective reading is derived as explained in section 3.1 (see Jasinskaja, DGfS, for detailed discussion), and there are no implications with respect to the position of the negative conjunct.

Russian *a* is an additive marker. However, unlike the English *and* it is restricted to multiple variable topic questions, most familiar kinds being double and multiple *wh*-questions like *Who likes what?*, *Who gave what to whom?*, with an alternative sets such as that in (38) (Jasinskaja and Zeevat, 2008, 2009). Therefore the most typical use of *a* in Russian is to conjoin clauses in pair list answers to double *wh*-questions, as in (39), which typically have a contrastive topic-focus structure (cf. Büring, 2003).

(38) $\left\{ \begin{array}{lll} \text{John likes football} & \text{Bill likes football} & \text{Mary likes football} \\ \text{John likes basketball} & \text{Bill likes basketball} & \text{Mary likes basketball} \\ \text{John likes tennis} & \text{Bill likes tennis} & \text{Mary likes tennis} \end{array} \right\}$

(39) Oleg ljubit futbol, Roma basketbol, *a* Vera tennis
Oleg likes football Roma basketball and Vera tennis

Oleg likes football, Roma likes basketball, and Vera likes tennis.

Wh-yes/no-questions introduced earlier in this section are a special case of double variable questions, whose one variable is of the polar type, cf. examples (27) and (32). Since corrections in turn are specific manifestations of *wh-yes/no*-strategies as was argued above, correction falls under the function of *a* in Russian. Crucially, the Russian adversative conjunction *no*, is restricted to *wh-yes/no*-questions that involve an argumentative dimension (or *why-yes/no*-questions). Therefore it has argumentative and denial of expectation uses, but is not appropriate for correc-

tion.¹⁴ Finally, *a* is *blocked* by *no*, that is, if the context justifies the use of *no*, then *no* must be used. This is why *a* is not used in standard argumentative and denial of expectation contexts, even though its semantics would allow this, as it is fully compatible with and less specific than the semantics of *no* (see Jasinskaja and Zeevat, 2009). *A* is also less specific than *no* in that it does not require a question under dispute, and hence does not establish any asymmetry between its conjuncts in terms of informativeness with respect to that question. Therefore *a* is symmetric in its corrective uses.

English *and* is a general additive marker that goes, in principle, with any kind of topic question. Like Russian *a*, it does not presuppose a question under dispute, does not encode any force constraint, and is blocked by the corresponding adversative marker, the English *but*. That means that the conventional semantics of *and* is, in particular, also compatible with a *wh*-question under dispute and a *wh*-yes/no-strategy, characteristic of corrections. However, if the negative conjunct comes first and the positive second, then the force constraint of *but* is satisfied, so *but* is allowed, and therefore required, whereas *and* is excluded by blocking. But if the order of conjuncts is positive first, negative second, and the force constraint of *but* fails, then *and* is an obvious replacement. This is why we observe the pattern in (40).

- (40) a. John is *not* going to Paris, *but* to Berlin. [correction]
 b. John is *not* going to Paris, *and* to Berlin. [$\neg[\phi \wedge \psi]$, $\neg\phi \wedge \psi$, *correction]
 c. John is going to Berlin, *but not* to Paris. [contrast, *correction]
 d. John is going to Berlin, *and not* to Paris. [$\psi \wedge \neg\phi$, correction]

Apart from blocking, another reason for the absence of a correction reading in (40b) might be a strong preference for the interpretation with the wide scope of negation, $\neg[\phi \wedge \psi]$, while correction is a special case of the narrow scope reading, $[\neg\phi] \wedge \psi$. It might be the case that both correction and $[\neg\phi] \wedge \psi$ get overshadowed by the $\neg[\phi \wedge \psi]$ interpretation.

Notice also that (40d) does not express correction unambiguously. It allows

¹⁴The landscape of formal contrast is somewhat divided between *a* and *no* in Russian. In examples like (26) and (33), which have clear contrastive topics, *a* is the preferred choice, whereas in cases like (34) it is *no*. As was pointed out above, the analysis of (33) in English probably requires a triple variable topic question with one variable being the polarity of the implicit argumentative goal and two *wh*-variables corresponding to the contrastive topic and focus in the overt linguistic material. It seems that being given the choice between encoding the argumentative dimension (by *no*) or the information-structurally relevant double *wh* (by *a*), Russian speakers give priority to the latter. In contrast, the analysis of (34) only involves one *wh*-variable in addition to the *yes/no*-variable, the constituents that instantiate this variable, the VPs in (34) do not normally undergo topicalisation, so there is no case for *a*, therefore *no* is used. If this analysis is correct, it shows that Russian *a* is losing its single additive function and becoming ambiguous between a contrastive topic marker and a correction marker.

for a correction-like configuration of the topic question and the question under dispute; the correction reading is also supported by the deletion of ‘John is going’ in the second conjunct which presumably would be licensed by a salient *Where is John going?* question, and therefore serves as an indication that this question is salient (for instance, as the question under dispute). But this configuration is in no way forced, so (40d) also allows for a simple “ $\psi \wedge \neg\phi$ ” interpretation, i.e. a simple conjunction of a positive and a negative statement. This becomes evident in contexts like (41) and (42). In (41), the fact that speaker A asks the question shows that he does not know which team sports speaker B likes, if any. Hence the question cannot be under dispute between A and B, so there is no point for correction. Therefore (41a), which expresses correction more or less unambiguously, is inappropriate in this context, whereas (41b) is fine, since it is not correcting speaker A, but simply stating that B likes basketball and does not like football. In (42), there is no possibility of ellipsis in the second conjunct, so the weaker $\psi \wedge \neg\phi$ interpretation is as far as we get.

(41) **A:** Do you like team sports, like football, or basketball?

B: a. ?? I don’t like football, but basketball.

b. I like basketball, and not football.

(42) She danced, and didn’t sing.

Japanese *-te/-de* comes close to the English clausal *and* in its range of uses (Mauri, 2008). For present purposes, we assume that they have the same semantics. However, Japanese adversative markers *-ga* (clause-final) and *-kedo* seem to pattern with the Russian adversative *no*, in that they are restricted to *why-yes/no*-questions, and do not cover the correction function.¹⁵ Hence the correction function is left over for *-te/-de*. Corrective symmetry is derived in the familiar way: *-te/-de* does not require a question under dispute, does not establish the second conjunct as more informative with respect to that question, and therefore does not require the second conjunct to be positive in its corrective uses.

Like English *and*, Japanese *-te/-de* underspecifies correction. In (43a), the weaker $\neg\phi \wedge \psi$ reading is most accessible. The correction interpretation can be helped by a strong prosodic break after *-de*. In (43b), the wide scope of negation

¹⁵Japanese *-ga* and Russian *no* seem to diverge in their formal contrast uses. In examples like *John likes football, but Bill doesn’t*, Japanese seems to prefer *-ga*, whereas Russian prefers the additive marker *a*. This might have to do with the fact that Russian *a* is on its way from a general multiple variable additive marker to a contrastive topic marker, as was mentioned in fn. 14 on p. 21. In Japanese no such process can be observed. Moreover, contrastive topichood is marked independently by the topic particle *-wa* on *John* and *Bill*. In other words, the differences in the coverage of *-ga* and *no* in the formal contrast domain can probably be accounted for by independent considerations, so they need not affect our working hypothesis that these two markers are semantically equivalent.

is the dominant reading. Correction and the narrow scope reading are difficult to get.

- (43) a. *utawa-nai-de odot-ta* [$\neg\phi \wedge \psi$, (correction)]
sing-NEG-AND dance-PAST
 He/she danced without singing. [$\neg\phi \wedge \psi$]
 He/she didn't sing, but danced. [correction]
- b. *odot-te utawa-nakat-ta* [$\neg[\psi \wedge \phi]$, ($\psi \wedge \neg\phi$, correction)]
dance-AND sing-NEG-PAST
 He/she didn't both dance and sing. [$\neg[\psi \wedge \phi]$]

However, the use of the nominaliser *-no-* and a copular construction makes it possible to background the question *What did I order?* in (44) and to force an exhaustive interpretation of the conjuncts with respect to that question. The effect is similar to that of the free relative clause in the English translations of (44a) and (44b). The result is that *tea* replaces *coffee* as the identifier of *what I ordered*, so both (44a) and (44b) are unambiguously corrective.

- (44) a. *tyuumonsi-ta-no-wa koohii-de-wa-naku-te kootya-desu*
order-PRF-NOM-TOP coffee-COP-TOP-NEG-AND tea-COP
 What I ordered is not coffee, but tea.
- b. *tyuumonsi-ta-no-wa kootya-deat-te koohii-de-wa-nai*
order-PRF-NOM-TOP tea-COP-AND coffee-COP-TOP-NEG
 What I ordered is tee, and not coffee.

As a last remark, the underspecification issue illustrated by (42) in English and (43) in Japanese, does not really arise in the case of Russian *a*. Since *a* is restricted to multiple variable questions, and in all its uses but the corrective ones shows a strong preference for connecting clauses with contrastive topics, the absence of a contrastive topic with *a* points to the corrective reading. Thus, both (45a) and (45b) can only be interpreted as corrections: *She danced rather than singing*. In order to convey a “simple conjunction” reading with the narrow or the wide scope of negation, $\neg[\phi \wedge \psi]$ and $[\neg\phi] \wedge \psi$, *a* must be replaced by a different marker, the conjunction *i*, which goes with single variable questions (Jasinskaja and Zeevat, 2008, 2009).

- (45) a. *Ona ne pela, a tancevala.* [correction]
she not sang AND danced
- b. *Ona tancevala, a ne pela.* [correction]
she danced AND not sang

In sum, we have shown three cases of corrective use of additive markers from

three different languages. In all three cases, the markers show symmetric behaviour in that they do not constrain the order of conjuncts to the negative-positive order, which is a consequence of the fact that additive markers do not encode a force constraint, which adversatives do. However, we have also shown that additional factors, such as blocking by an adversative marker, or competition with other readings of the additive marker, can suppress a corrective reading under certain conditions. This means, for instance, that even though English *and* does not have corrective readings with the negative-positive order of conjuncts, this does not make it “asymmetric in the other direction”, the asymmetry is due to other factors and need not be encoded in the meaning of *and*.

3.4 Semantic vs. pragmatic asymmetry

We started this section with formulating the idea that the asymmetries observed in the corrective and the argumentative uses of adversative markers are manifestations of the same underlying property of these markers. In the proposed account, this property is the force constraint, which, in our generalised formulation, requires that the second conjunct of the adversative marker be more informative with respect to a question under dispute, where informativity is defined in terms of argumentative force along the lines of Merin (1999) and Winterstein (2010). This account relies on the assumption that adversative markers encode the force constraint as part of their lexical meaning, whereas additive markers do not. In this section we will question this assumption, looking both at arguments that suggest that *and*, too, might encode a certain (though different) kind of asymmetry, and at arguments for the view that the asymmetries are due to pragmatic factors related to discourse dynamics and should not be stipulated in the semantics of either *and* or *but*.

A whole range of asymmetric definitions of *and* have been discussed in the literature, but we will concentrate on one which seems to have the most direct bearing on the problem at hand. Winterstein (2010) formulates the conditions on the use of *and* (or rather, the French *et*) in argumentative terms: (a) the conjuncts of *and* must have the same argumentative orientation, i.e. both argue for (or against) the same hypothesis H ; and (b) the contribution of the second conjunct must be strictly positive given the contribution of the first. That is, if the first conjunct supports H , then the first and the second conjunct taken together give even stronger support to H . On this view, *and* is similar to *but*, also being associated with an orientation and a kind of force condition, formal definitions given below:

- (46) ϕ *and* ψ :
- a. Orientation: $r_H(\phi) > 0$ and $r_H(\psi) > 0$
 - b. Force: $r_H(\psi|\phi) > 0$

This analysis is motivated by the pattern observed in examples like (47). In both (47a) and (47b), where no conjunction is present, the most accessible interpretation is that “have a great time” and “watch a movie” describe the same activity of John, regardless of the order of presentation. In (47c) the clauses conjoined by *and* refer to two distinct activities, i.e. John had a great time doing something else and, in addition, watched a movie. However, if the order of clauses is reversed the effect disappears, so (47d) seems to mean roughly the same as (47b).

- (47) a. John had a great time. He watched a movie.
b. John watched a movie. He had a great time.
c. John had a great time and watched a movie.
d. John watched a movie and had a great time.

The contrast between (47a) and (47c) is readily explained by the view of *and* as an additive particle developed in Zeevat and Jasinskaja (2007). The conjuncts of *and* give distinct answers to the same question, so if the question is *What did John do?*, (47c) names two distinct activities, whereas in (47a) there is no *and* and therefore no distinctness requirement. However, as Winterstein correctly observes, this analysis makes false predictions for (47d), as it is expected to be parallel to (47c).

Winterstein’s solution is based on the observation that an obvious argumentative goal in (47d) would be something like ‘John spent a nice evening’, in which case the second conjunct ‘John had a great time’ gives a stronger argument than the first, ‘John watched a movie’. Obviously, the same construal is not possible for (47c), because the first conjunct already says it all. Here one would presumably have to assume a trivial argumentative goal of the form ‘An event of having a great time and an event of watching a movie happened’. On the assumption that the events are distinct, each conjunct of (47c) adds to the force of the argument, as one needs both conjuncts to verify a conjunction. If the events are the same, then one conjunct does the job regardless of which one it is. Hence, the events must be distinct.

What does this approach predict for corrections with additive markers? Based on the assumptions we made in previous sections, the argumentative goal in (48) would have to be ‘John went to Berlin’ (and nowhere else, on a particular occasion). But under exhaustive interpretation the first conjunct already says it all, and the second logically follows. So one predicts that the positive-negative order is ruled out with *and*, just like with *but*.

- (48) John went to Berlin, and not to Paris.

One general remark is in order before we turn to possible amendments. The fact that the second conjunct in (47a) or (48) does not strengthen the argument for

the assumed argumentative goals does not mean that it adds no new information. In (47a) it is a specification in what way John had a great time, while in (48) it is an indication to the hearer which part of his assumptions should be corrected, cf. our discussion in section 3.1. Each utterance in discourse must add something new. This is a general principle of pragmatics which need not and should not be stipulated in the semantics of any linguistic expressions. However, discourse markers can indicate in what way the information conveyed by the utterance is new. Rather than using the notion of ‘distinctness’, one could say that *and* introduces a new answer to the same question. What it means to be new, in turn, depends on the nature of the question.

For simple questions like *Where did John go?* and *What happened?* we will stick to our original assumption that ‘new’ means ‘distinct’, i.e. distinct places, distinct events, etc. On the assumption that the topic question behind (48) is a *wh-yes/no*-question *Where “whether” John went?*, cf. (32), the novelty requirement is satisfied by the fact that the conjuncts have distinct polarity, positive vs. negative, i.e. distinct with respect to the *yes/no*-variable, and by the fact that Paris is distinct from Berlin (with respect to the *wh* variable).

In (47d), the topic question has an argumentative dimension: What speaks for the assumption that John spent a nice evening?:

$$(49) \left\{ \begin{array}{l} \text{John had a great time} \Rightarrow \text{John spent a nice evening} \\ \text{John was in a good mood} \Rightarrow \text{John spent a nice evening} \\ \text{John watched a movie} \Rightarrow \text{John spent a nice evening} \\ \text{John played chess with Mary} \Rightarrow \text{John spent a nice evening} \end{array} \right\}$$

Unlike the *why*-questions for *but*, cf. (29), this is a single variable *wh*-question ranging over possible arguments for the consequent ‘John spent a nice evening’. The polarity of the consequent does not vary, which accounts for the same argumentative orientation of the conjuncts of *and*. The novelty requirement, however, amounts to something quite different than in the case of simple objects and events. A new argument is one whose contribution to the argumentative goal is strictly positive given previous context, as defined in (46b). Notice that novelty on arguments is an asymmetric relation, whereas distinctness of objects is symmetric. Since the corrective use of *and* is justified by a topic question that does not involve an argumentative dimension, novelty does not make corrective *and* asymmetric.¹⁶

In other words, it looks like the putative force condition for *and* can be reduced to novelty, which replaces ‘distinctness’ in our new definition of additivity. However, one could reverse the argument and wonder if the same trick could be applied to *but*. At first glance, the two force conditions look quite different:¹⁷

¹⁶This analysis is a product of extensive discussions with Henk Zeevat and will go into a new version of Zeevat and Jasinskaja (2007).

¹⁷In our generalised definition, *H* and $\neg H$ in (50) should be replaced by A_1 and A_2 , i.e. mutu-

- (50) a. Force, *and*: $r_H(\psi|\phi) > 0$
 b. Force, *but*: $r_H(\phi) < r_{-H}(\psi)$

For *but*, the second argument ψ must on its own be stronger than the first argument ϕ . For *and*, it is enough that ϕ and ψ together are stronger than ϕ alone. However, one could reformulate (50b) as (51).

- (51) Force, *but*: $r_{-H}(\psi|\phi) > 0$

The condition says that the contribution of ψ to the argument against H must be strictly positive given ϕ . However, since ϕ argues in the opposite direction, in order for (51) to be satisfied, ψ must be individually stronger than ϕ to outweigh its effect.¹⁸ Above we argued for removing (50a) from the lexical entry of *and* and for seeing it as a characterisation of what it takes for ψ to be a *new argument*, given ϕ . What if, by analogy, we took (51) as a definition of a *new counterargument*?

On the one hand, this would be an appealing move since it would mean that the force condition characteristic of *but* simply follows from the orientation condition and a general pragmatic notion of novelty. This would explain why adversative markers in language after language show the same argumentative asymmetry.

On the other hand, in this way one can only capture the argumentative asymmetry, and not the corrective asymmetry, because if we applied the same reasoning to the corrective uses of *but* as we did to *and* above, then we would have to say that since the topic question in corrections does not involve an argumentative dimension, cf. (32), the conjuncts of *but* are evaluated for novelty not as arguments, but as polarity-object pairs, so the definition in (51) would not apply. Novelty would be satisfied by distinctness, which is a symmetric relation, so we would predict no preference for one order of conjuncts over the other.

The crux of the matter lies really in the separation between the topic question on the one hand and the question under dispute on the other. The analysis of *but*-corrections developed in previous sections is based on the stipulation that the orientation condition is satisfied with respect to a non-argumentative topic question, i.e. ultimately, by distinctness with respect to a polarity variable, whereas the force condition is satisfied with respect to the question under dispute and is formulated in purely argumentative terms. Or in other words, for orientation the conjuncts of *but* are treated as polarity-object pairs, whereas for force they are treated as arguments. In contrast, the conjuncts of *and* in corrective uses are always treated as polarity-object pairs, both for orientation and for force (i.e. novelty). Why would this be so?

Fully realising that the answer is less satisfactory than one would wish, I conjecture that this can be motivated by the nature of additive vs. adversative markers.

ally exclusive answers to the question under dispute.

¹⁸(51) is inspired by Merin's (1999) formulation of the felicity conditions of *but*.

Additive markers are non-argumentative in their core. They can be used in argumentative contexts, that is, in combination with *why*-questions as explained above, but these uses depend on accidental properties of the context and constitute a small part of the overall range of uses of *and*. In contrast, adversative markers are argumentative by nature. The absolute majority of their uses involves topic questions with an argumentative dimension, even in formal contrast uses as we ultimately had to concede, and it is only in corrections that the argumentative dimension is absent in the topic question. If it was not for corrections, we could stick to a purely argumentative definition of *but* along the lines of Winterstein (2010) and not mesh with topic questions at all. Obviously, this approach suggests itself for adversative markers that do not have corrective uses, such as the Russian *no* or the Japanese *-ga*.

It would seem that when an adversative marker develops a corrective use, it gives way a little bit in the direction away from argumentativity. It reanalyses its orientation condition in formal terms, but keeps an argumentative basis for force, thus breaking the natural pragmatic relationship between force and orientation via novelty. Thus, while obligatory syntactic negation in corrections is the result of opposite orientation redefined in non-argumentative terms, the corrective asymmetry of *but* is a manifestation of the old argumentative nature of force.

4 Consequences for a general theory of additivity and adversativity

The main focus of this paper was on corrective uses of adversative and additive markers, especially on the phenomenon of corrective (a)symmetry, i.e. the constraints that various markers impose on the position of negation in the first vs. second conjunct. However, in order to come to terms with the problem, we had to review some most central parts of the theory of *and* and *but*. The lesson we should learn from this study is that reasoning with causal and inferential relationships between events and propositions is involved to a very different extent in various uses of adversative markers. It is most clearly present in the denial of expectation and argumentative uses of *but*, where the knowledge of links between, e.g. the price and the looks of a ring, on the one hand, and the inclination to buy it, on the other, plays a crucial role in inferring the argumentative goal and the role of each conjunct of *but* with respect to it. In formal contrast uses the argumentative nature of *but* still plays a role in establishing in which way the conjuncts are “opposite”. However, the argumentative goal is defined by a small number of simple operations on the information structure of the conjuncts, and the contribution of each conjunct to that goal is determined by logic rather than factual

knowledge. Finally, we have argued that in corrective uses the “oppositeness” of the conjuncts is not characterised in argumentative terms anymore, but directly in terms of their formal properties: negation vs. no negation. At the same time, the corrective asymmetry of *but* was analysed as a rudimentary effect of the argumentative asymmetry. In other words, as an adversative marker develops formal contrast uses and then corrective uses, it gradually loses its causal, inferential and argumentative nature, whereas the formal similarities and differences between the conjuncts become increasingly important. This reflects the dual nature of *but* as a marker of discourse relations: causal relations (concession) on the one hand and resemblance relations (contrast, correction) on the other (cf. Kehler, 2002).

Coming back to the inferentialist vs. formalist debate, i.e. the question which use of *but* is most basic, ‘denial of expectation’/‘concession’ or ‘formal contrast’, the present paper makes a clear statement. Although historically ‘denial of expectation’ is perhaps the origin of most adversative markers, a marker that has gone as far as the English *but* in the process of semantic weakening cannot be characterised in inferentialist terms any more, and it is particularly the corrective uses that undermine this analysis. Corrections are the main difficulty for Blakemore (2002) and Winterstein (2010) on their way to a general theory of *but*. Instead, the analysis developed in this paper is based essentially on the notion of contrast, but unlike in some earlier proposals (e.g. Fraser, 1998), it is not just any kind of contrast, but contrast along the dimension of polarity, i.e. contrast between “something positive” and “something negative”. This is the main reason why the present proposal does not share the problems of the ‘plain contrast’ approach criticised a lot by Blakemore (1989, 2002). What is “positive” and what is “negative”, in turn, varies across the different uses of *but*. In corrections, “positive” and “negative” means *syntactically positive* and *syntactically negative* applying to the logical form of the conjuncts. In formal contrast and argumentative/concessive uses, the contrast concerns the polarity of the argumentative goal: $\phi \Rightarrow H$ vs. $\psi \Rightarrow \neg H$, which implements the argumentation-theoretic notions of argument vs. counterargument, and the relevance-theoretic ‘denial’ or ‘contradiction’. In the proposed theory, the variation boils down to variation in the form of the alternatives involved in the contrast relation, which either contain what we have called ‘an argumentative dimension’ (i.e. the symbol ‘ \Rightarrow ’ defined in probabilistic terms after Merin (1999) and Winterstein (2010)), or not. The central role played by negation in the semantics of *but* (that is, plain negation stripped of all the pragmatic ‘extras’ involved in more complex notions of denial and counterargument) is a further development of the idea present in Sanders et al. (1992) and Knott and Sanders (1998), whereas in referring to information-structural alternatives, *alias* topic questions, this paper continues the tradition of Sæbø (2003), Umbach (2004,

2005) and Jasinskaja and Zeevat (2008, 2009).¹⁹

Additive markers have been our “control case” all along, so we did not have much new to say about them. However, the corrective uses of additive markers, which received hardly any attention in the literature before, have been systematically studied in this paper. It was shown that these uses fit nicely within our theory of additive markers and do not call for extensions. In particular, the theory correctly predicts symmetric behaviour of the English *and*, the Russian *a* and the Japanese *-te/-de* in their corrective uses, in contrast to correction markers recruited from the pool of adversatives. We argued against a recent argumentative reanalysis of *and* by Winterstein (2010) showing that it cannot account for the corrective symmetry of additive markers, and working away the original counterexamples to Zeevat and Jasinskaja (2007). Our proposal for *and* ultimately reflects the same idea as that for *but*: the second conjunct of *and* must be “new” given the first conjunct along the dimension(s) specified by the topic question, whereas the argumentative aspect is a parameter of variation between different uses—it is present if the topic question has a ‘ \Rightarrow ’ in it, and absent otherwise.

An issue that deserves more attention than it could be given in this paper is the interface of the proposed approach to syntax. Corrections are well known for their special syntactic properties. One of them is obligatory syntactic negation in one conjunct, and another is the characteristic ellipsis in the second conjunct. As for the former, we argued that it is a manifestation of distinctness, or novelty, applied to the polarity variable at the most formal level, the level of logical form. However, we did not specify the precise conditions under which the alternatives that the semantics of *but* and *and* operates on should be defined as alternative logical forms, and when they are alternative semantic objects at a “deeper” level of semantic representation. It seems that logical forms become relevant whenever the variables, i.e. the parameters of variation between alternatives, cross-cut them at a subsentential level. That is, the variables correspond to just a DP, or just an adverbial phrase, or just negation, etc. In such cases, the variables, obviously, have direct correlates in the form of focus and contrastive topic phrases in the sentence structure. In contrast, when the whole proposition fills a question variable, or when it is the polarity of the argumentative goal, which does not correspond to anything in the surface realisation, then the alternatives are defined at a “deeper” semantic level. But clearly, this idea still needs to be worked out. Concerning ellipsis, the general direction for the solution is also quite clear. We have argued that the question under dispute in corrections is a *wh*-question, e.g. *Where did John go?* in *John didn’t go to Paris, but to Berlin*. This is the question with respect to

¹⁹The idea of contrast between alternatives has recently been imported into relevance theory by Olmos and Ahern (2009) for the analysis of *but* and *however*, but it is used differently and motivated by a different set of facts in that paper.

which the conjuncts are interpreted exhaustively, and this is also precisely the kind of question that should license the deletion of *John went* in *John went to Berlin* (cf. Vicente, 2010). Again, the details of this proposal are a task for the future.

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