

Negating and Conjoining Imperatives

Magdalena Schwager

The paper discusses a surprisingly non-Boolean reading of German imperative conjunctions. I explore the conceptual and empirical disadvantages of a semantic analysis as given by Arthur Merin, and argue that a syntactic solution can do better, showing that the data in question can be captured as instances of Right Node Raising.

1. Introduction

Traditionally, conjunction and negation are assumed to operate on functions to truth values and thus together with the latter form a Boolean algebra (cf. Keenan & Faltz 1985).¹ Giving credit to the ubiquitous observation that there is no immediately straightforward way of connecting imperatives to truth values, Arthur Merin opts for an alternative non-Boolean semantics for the latter (Merin 2002a²,b).

He adduces a puzzle to be found in the interaction of negation with conjoined German imperatives as empirical evidence for his claim that imperatives belong to a special *language of desire* which is assumed not to be based on a Boolean algebra. For each language, this part of semantics is assumed to exist parallel to the ordinary, propositional and thus basically Boolean part needed for declaratives.

¹For those not familiar with algebraic structures it might be helpful to say that an algebra consists of a set of entities together with operations defined on that set, a familiar example being the integers together with the operation of addition. Different kinds of algebras are reflected in different properties of the respective operation(s). Since the final solution is a syntactic one, deeper insights into algebraic notions will not be crucial for understanding this paper though.

²Merin's original motivation is to provide insight into the nature of preferences, proving an argument by Aristotle which in Merin's reformulation says: *If A is the opposite of B, and C is the opposite of D, and A together with C is better than B together with D, then A is better than D, and C is better than B.* (Prior Analytics II.22 68a25-b7); Aristotle illustrates this with the example of the passionate lover: *If then every lover under the influence of his love would prefer his beloved to be disposed to gratify him (A) without doing so (C), rather than gratify him (D) without being inclined to do so (B), clearly A - that the beloved should be so inclined - is preferable to the act of gratification.* (68a39-b2).

In the following I will briefly present the data and how Merin's account can take care of them, but then argue that his account faces severe conceptual problems and in addition forbids a parallel treatment of closely related phenomena.

1.1. Merin's puzzle

If conjunction and negation truly were the operations of a Boolean algebra as they are traditionally conceived of, the laws of De Morgan would be expected to hold:

- (1) a. $\neg(A \wedge B) = \neg A \vee \neg B$
 b. $\neg(A \vee B) = \neg A \wedge \neg B$

On the other hand, if they were not, we would expect to find at least some examples that do not conform with De Morgan's laws. Merin shows that there is a reading for the German example in (2) which in fact violates the first law of De Morgan as given in (1a):

- (2) Geh und sprich nicht!
 walk.IMP and talk.IMP not

On one of its readings (cf. section 2 for a detailed discussion), this does in fact mean that the addressee should neither walk nor talk. Since this reading is highly unexpected under traditional assumptions concerning negation and conjunction, I will call it the *Fancy Reading* (**FR**) in the following. Even more surprisingly, (2) does not get the weaker reading predicted by De Morgan's law in (1a), namely that the addressee should not perform both activities together, while doing either of them by itself is not objectable.

1.2. An account within the language of desire

Under Merin's approach imperatives are assumed to correspond to non-propositional objects, viz. *prospects* which are best imagined as concepts of situations that can get instantiated in the actual world. An imperative like *Walk!* thus serves to demand an instance of the prospect of you walking. While propositions can be conjoined and negated according to the laws of Boolean algebra, prospects belong to a different algebraic structure. Merin assumes that conjunction and negation as defined for prospects form an abelian group.³ *Walk!* then denotes the atomic prospect *W* which opens up the subgroup of all those prospects being characterized by the addressee walking, neglecting all his other possible activities. This comprises the addressee walking (*W* itself), doing nothing (the neutral

³A familiar example for an abelian group are again the integers together with the operation of addition. In order to constitute an abelian group the set has to be non-empty, and the following properties have to hold (i) the operation is closed on the set, (ii) associativity, (iii) existence of a neutral element, (iv) existence of inverse elements for each set element, (v) commutativity.

element E), the addressee doing a double dose of walking (W+W), etc. So we end up with the subgroup {E, W, W+W, -W, ...}. The imperative now makes use of the natural ordering inherent to the group built up by recursive application of the additive operation and adding the inverse elements. This order has to be taken as isomorphic to the preference order. The imperative thus results in saying that everything above W is preferred, viz. 'The more walking you do the better!'

English imperative conjunction *and* and its German equivalent *und* denote precisely this amount enhancing additive operation. *Walk and walk!* denotes the element W+W (our familiar double dose of walking). Conjunction of two different imperatives opens up a larger subgroup, e.g. *Walk and talk!* giving rise to {E, W, T, W+T, -W-T, W+W+T, ...}.

Now there are two ways to conceive of negation, one being preference reversion, in the example case 'The less walking you do, the better!' (that's why the only possibility to conform with *Don't walk!* is simply E, doing nothing with respect to walking). This is the interpretation which Merin assigns to English *don't*. He calls it *denial*.

This would still not be sufficient for giving us the Anti-De Morgan reading of German (2); inverting the preferences would lead to everything below W+T being preferred, meaning that you could well do W (walking without talking) or T (talking without walking). In fact it turns out to be equivalent to what a truly Boolean treatment would have given us, thus doing well enough for English which in this respect is as unproblematic for De Morgan's laws as in declarative cases (cf. 2 for closer discussion).

Alternatively, German negation *nicht* is to be associated with the operation of *inverse-formation*. But what is the inverse of an activity? (Or, to put it differently, what is the meaning of -W, -W-T, ...?). Merin proposes that it means subtracting the relevant (amount of) activity from the addressee's aspirations. Subtracting a simple dose of walking (-W) from being about to do a simple dose of walking (W) leaves you with E, namely doing nothing (with respect to walking).

So, finally, the solution to the non-Boolean fancy reading of (2) stems from the fact that *nicht* is interpreted as inverse-formation (unlike English *don't*), subtracting walking and talking from what the addressee might have done, thus saying that doing nothing with respect to both walking and talking is preferred.⁴

The costs for this explanation lie not only in the highly non-standard semantics that has to be postulated for the *language of desire*, but also in making languages differ as to which operation negation denotes within the respective language of desire (German *nicht* denotes inverse-formation, English *don't* denotes denial).

⁴Merin (2002a) remains very implicit about this, but it seems to make the unwanted prediction that (2), *Geh und sprich nicht!* might not be sufficient to cancel a stronger, say W+W+T+T aspiration of the addressee, ending up with giving W+T as acceptable behaviour, instead of E.

2. *The data revisited*

As outlined so far, in contrast to English, German imperatives as in (3b) show non-Boolean interactions of negation and conjunctions which is just what would be expected under the non-standard semantics proposed by Merin (2002a;b). In the following, I will take a closer look at the possible readings for the constructions under discussion in order to then take into account the behaviour of related phenomena.

- (3) a. Don't drink and drive!
 b. Trink und fahr nicht!
 drink.IMP and drive.IMP not

Neither language allows for negation to outscope the imperative.⁵ (4) exemplifies this for English, but German behaves exactly analogously.

- (4) Ede told the graduate student: 'Don't drink and drive!'
 ≠ Ede didn't tell the graduate student to drink and drive.

Both languages allow for a reading under which the conjunction takes wide scope with respect to the negation (**WS**), thus resulting in a negative and a positive imperative. The semantic outcome depends trivially on the position of the negation. Prosodically, this reading is favoured by a short intonational break.

- (5) [IMP NOT drink] & [IMP drive]
 you shouldn't drink, you should drive (**WS**_{Engl})
 (6) [IMP trink-] & [IMP NOT fahr-]
 you should drink, you shouldn't drive (**WS**_{German})

The reading in question is the one most likely to arise where one has two options mutually excluding each other, as for instance if you came by car to a well-supplied party:

- (7) Q: What shall I do now?
 a. Don't drink and drive! (pro-car)
 b. Trink und fahr nicht! (pro-alcohol)
 drink.IMP and drive.IMP not

The preferred reading for the English example (3a) involves narrow scope of the conjunction with respect to the negation (**NS**). It conforms to the first law of De Morgan (cf. (1a)), meaning that the addressee shouldn't perform both activities in combination while there are no objections against either possibility taken on its own:

⁵Widest scope of negation with respect to the imperative would result in what Hamblin (1987) calls *type 5-negation*.

- (8) IMP NOT [drink & drive]
you may do either, but don't do both

This reading is unavailable for German (3b), which likewise has a preferred reading precluded for English (3a).⁶ In that case, each conjunct seems to be negated by itself (I have dubbed this the *Fancy Reading* in 1.1). As Merin observes this is

⁶I am indebted to Mark de Vos for having pointed out to me that this is maybe not so clear as presented in Merin (2002a). As by now well known, DP conjunction often does not correspond to the Boolean conjunction operation. Szabolcsi & Haddican (2003) discuss in detail instances of the following:

- (9) I didn't take hockey and algebra.

They note that with unstressed *and* this is only acceptable if the two conjuncts form a "normal" package in the respective context, and then (due to *homogeneity*, cf. Löbner (2000)) the sentence gets the non-Boolean interpretation *both not*. Only with a stressed *AND* do we get the truly Boolean *not both* interpretation, packaging being irrelevant in that case. Although Szabolcsi & Haddican explicitly step aside from talking about VP conjunction, it is obvious from the examples given here that VP conjunction behaves differently: all my examples involve unstressed *and* and yet at least favour the non-Boolean reading, if the other reading is available at all. Additionally, their acceptability does not seem to be subject to any packaging effect.

- (10) a. Don't drink and drive. [packaging; no FR]
 b. Don't swim and dance (in the hall). [no packaging; no FR]

My informants on English (one AE, one BE) did not get non-Boolean FR readings for sentences as in (10). It seems to get slightly better though, if a longer list of prohibited activities is given; *or* would still be preferred:

- (11) (doctor): Don't swim, dance, drink, eat and smoke. [??? FR]

A first google search on the strings *don't eat and*, *don't walk and*, *don't eat and drink* gave the following 3 non-Boolean examples as opposed to 14 truly Boolean ones (counting only imperative conjunction in the scope of negation and leaving aside explicitly modified examples with e.g. *at the same time*, *then*):

- (12) Set a good example: don't eat and drink in the lab.
http://www.cs.bris.ac.uk/Tools/Local/HandbookNext/proc_super.html
- (13) Please don't eat and drink in the labs. If you do, don't get caught!! If you do eat and/or drink in the labs and you don't get caught then, PLEASE, clean up after yourself!!
<http://ugweb.cs.ualberta.ca/cleanlabs.html>
- (14) Don't walk and cycle in the dark if possible or keep to well lit areas.
http://www.bbc.co.uk/health/fitness/life_young2.shtml

In all contexts these are opposed by lots of like instances of *Don't V₁ or V₂*. The *eat and drink* examples (12) and (13) might possibly be explained away as involving a package-reading, creating a context where cases in which only one of the activities is performed are taken to be completely irrelevant. Nevertheless, (14) can't be reasonably accounted for in that way. Especially if the latter is undisputedly good English something more substantial will have to be said about the English VP-conjunction as well.

unexpected according to the first law of De Morgan and thus provides evidence in favour of the non-Boolean proposal.

- (15) IMP [NOT drink & NOT drive]
neither drink nor drive

The non-truthconditional character of Merin's *language of desire* readily explains the data in (15). As shown in the following section, it faces various difficulties in other confronts though.

3. Problems for a semantic solution

While non-Boolean accounts for conjunction and disjunction have been put forth successfully in various areas (e.g. *free choice disjunction* (Zimmermann 2000, Aloni 2003, Geurts 2004, Merin 1992), conjunction (Krifka 1990, Merin 1992), and DP conjunction (Szabolcsi & Haddican 2003)), I don't consider it particularly helpful for the problem under discussion for the following reasons.

First, the non-Boolean reading does not arise with conjunctions of German infinitivals which can be used as substitutes for the morphologically marked imperative (cf. Wratil 2000). The constructions pattern exactly with English (3a), allowing for WS_{Engl} and NS, while excluding FR:

- (16) Nicht trinken und fahren!
 not drink.INF and drive.INF
- a. WS_{Engl} : [IMP NOT drink] & [IMP drive]
 'don't drink, but (then) drive'
 - b. NS: IMP NOT [drink & drive]
 'you may do either, but don't do both'

So from Merin's perspective it seems that the interpretation of German negation does not only vary with the type of language, but also (within the *language of desire*) with either the morphology or, more likely, the position of the verb. Merin himself notices this problem and reflects it in his distinction of sentence final vs. sentence initial negation, distinguishing within the German *language of desire* an English type denial negation (sentence initial) and inverse formation (sentence final). Only the latter gives rise to FR.

On the other hand, we also find non-Boolean readings in declarative contexts:

- (17) Das Kind ißt und trinkt nicht.
 the child eats and drinks not
 'The child neither eats nor drinks.' (non-Boolean FR)
 (additionally: 'The child is eating, but he is not drinking.', WS_{Germ})

So even if we wanted to appropriately restrict the non-Boolean interpretation of negation to a subpart of the *language of desire*, we would still have to come up

with an explanation for the strikingly parallel non-Boolean cases in the realm of declarative sentences.

I therefore conclude that Merin's proposal is unattractive for at least three reasons: (i) it crucially relies on the postulation of differences between the semantic algebras of German and English, (ii) the lexical semantic interpretation of German negation has to vary according to two parameters, namely +/- *language of desire*, +/- sentence-initial, and (iii) an independent explanation for the non-Boolean readings in declarative contexts still needs to be found.

Instead, I want to make use of the fact that the interpretation of German *nicht* 'not' ((3b) vs. (16)) varies according to morphosyntactic differences which analogously can be found between German and English imperative conjunctions ((3a) vs (3b)).

In the following, the difference between (3a) and (3b) will thus be related to differences in morphosyntactic makeup, not to differences in the semantic algebra in imperative contexts.

4. A syntactic solution

As to imperatives I will rely on standard assumptions as elaborated for example in Wratil (2000).

The imperative semantics depends on specific features which are situated in the C projection. So far, German and English differ in that overt movement of the morphologically marked imperative verb to C is triggered only in German. The English verb is allowed to stay in situ. I will assume that in the positive case a \emptyset -auxiliary is present, which has to be realized overtly in the case of emphasis or negation:⁷

- (18) a. Stop it!
 b. DO stop it!
 c. Don't stop it!

As for the interpretation, I will assume for the sake of simplicity that imperatives denote fulfillment conditions (cf. e.g. Lohnstein 2000). Matrix tense is conceived of as deictically denoting intervals and restricting them with respect to their location with respect to utterance time (cf. von Stechow 2002)⁸.

- (19) || (you) P! || is fulfilled iff [$t_4 > t_o$ & $\exists e[\tau(e) \subseteq t_4$ & P(ADR,e)]]
 where t_o denotes the utterance time, t_4 is a free variable over intervals, e

⁷Nothing hinges on the exact technical implementation, as long as the S-structure positions of German and English imperatives with respect to negation are captured correctly. I completely abstract away from the analysis of the IP layer as irrelevant for the present purpose, thus leaving aside e.g. the problem of the overtly missing subject.

⁸In that respect, morphological present, past and future behave analogously to personal pronouns (e.g. *s/he*) which restrict their possible referents to being male or female respectively.

a variable over events, $>$ temporal subsequence, τ a function from events to their running time, \subseteq a partial order on intervals

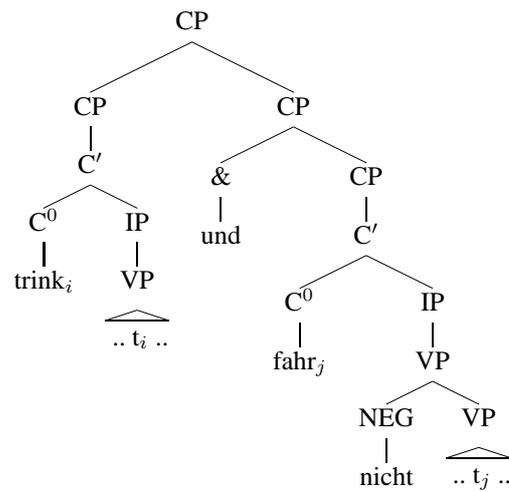
As expected, this permits a straightforward account of the Boolean cases exemplified by the WS and NS readings.

4.1. Conjunction scoping over Imperative (WS)

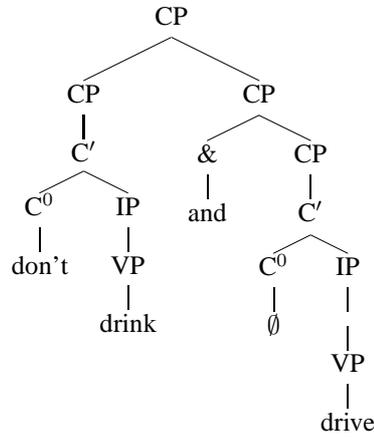
Syntactically I assume an adjunction analysis for coordination as argued for in Hartmann (2000), but nothing pertinent to the crucial data hinges on that particular analysis.

Since we have assumed that imperative morphology is dependent on features in C, conjunction of two imperatives is CP-conjunction. The negation stays low in the very conjunct where it surfaces. This gives rise to conjunction of a positive and a negative imperative in German (20), and a negative and a positive imperative in English (21):

(20)



(21)

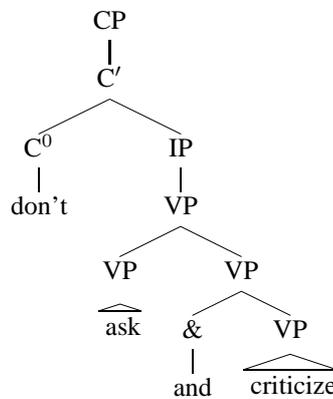


Semantically, the conjunction of two imperatives boils down to a sequence of two imperatives as elaborated in Krifka (2001).

4.2. *Narrow Scope of the conjunction with respect to negation (NS, English)*

Conjunction below negation can be assumed to be VP conjunction thus giving rise to a structure as in (22):

(22)



This is exactly the structure we would also get for the German infinitival conjunction (cf. (16)), apart from the fact that no overt auxiliary is required in the German case.

Semantically, due to the deictic interpretation of tense we get the correct interpretation that within the designated future interval the imperative is referring to, there is no interval comprising a complex event of the addressee containing a drinking and a driving part:

- (23) $\neg\exists t' \subseteq t_4: \exists e[\tau(e) \subseteq t': \exists e' \exists e'': e' \subseteq e'' \& e'' \subseteq e' \& \text{drink}(\text{ADR}, e') \& \text{drive}(\text{ADR}, e'')]$

4.3. Right Node Raising for the Fancy Reading

As Merin has observed, the traditional assumptions for imperatives and the logical connectives don't allow us to account for the German examples under their non-Boolean Fancy Reading:

- (24) Trink und fahr nicht!
 drink.IMP and drive.IMP not
 'you should neither drink nor drive'

Under that reading it is exactly similar to (25):

- (25) Trink nicht und fahr nicht!
 drink.IMP not and drive.IMP not

This exactly parallels cases of ellipsis on the right edge of the first conjunct known under the maybe misleading name of *right node raising* (RNR):

- (26) Walter liebt und Clarisse verachtet Wagner.
 Walter loves and Clarisse despises Wagner
 'Walter loves Wagner and Clarisse despises Wagner.'

Hartmann (2000) assumes that these constructions do not involve movement, but rather PF-deletion of the final material in the first conjunct, thus postulating only a PF-difference between (26) and (27) (and likewise (24) and (25)):

- (27) Walter liebt ~~Wagner~~ and Clarisse verachtet Wagner.
 Walter loves ~~Wagner~~ and Clarisse despises Wagner.

This PF-deletion is subject to two constraints, first, the deleted material has to be identical to overt material at the end of the second conjunct, and second, the information structure has to ensure that the elements preceding the deleted string and the overt identical material respectively contrast with each other, both being marked with a pitch accent (e.g. in (25) the verbs *liebt/loves* and *verachtet/despises*).

Hartmann (2000) argues at length that the process in question is in fact an instance of PF-deletion, the strongest evidence being perhaps that it can target also non-constituents:

- (28) Peter verspricht seiner Mutter in die Kirche zu gehen und Maria
 Peter promises his mother to the church to go and Maria
 verspricht ihrer Mutter in die Kirche zu gehen. [her (6a), p.57]
 promises her mother to the church to go

'Peter promises his mother to go to church, and Maria promises her mother to go to church.'

Furthermore it can be shown not to be subject to constraints familiar for movement, it does for instance not obey the Right Roof Constraint Hartmann (2000:60):

- (29) [_{CP}Hans erzählte uns, [_{CP} daß Anna nach Paris ~~gefahren ist~~] und
Hans told us that Anna to Paris ~~traveled is~~ and
[_{CP}Max erzählte uns, [_{CP} daß Ute nach Rom gefahren ist.]]]
Max told us that Ute to Rome traveled is
'Hans told us that Anna traveled to Paris and Max told us that Ute traveled to Rome.'

Furthermore, quantifiers are interpreted independently, as if there were truly two instances of the same QP:

- (30) a. Hans füttert und Peter jagt ein Rentier.
Hans feeds and Peter hunts a reindeer
'Hans is feeding a reindeer and Peter is hunting a reindeer.'
b. Hans füttert ein Rentier und Peter jagt ein Rentier.
Hans feeds a reindeer and Peter hunts a reindeer
'Hans is feeding a reindeer and Peter is hunting a reindeer.'

While the expected interpretation of one moved phrase would be that both events involve the very same animal, (30a) gets the same reading as (30b) thus indicating that they only differ at PF:

- (31) Hans füttert ~~ein Rentier~~ und Peter jagt ein Rentier.
Hans feeds ~~a reindeer~~ and Peter hunts a reindeer

Assuming that Hartmann (2000)'s PF-deletion account is on the right track German FR can be accounted for straightforwardly.⁹ The structure is exactly parallel

⁹In fact, my anonymous reviewer has pointed out that Hartmann (2000)'s arguments for PF-deletion being the only solution for RNR are maybe not absolutely compelling (e.g., RNR of non-constituents could maybe still be explained in an account involving multiple instances of movement). Nevertheless, (s)he agrees that PF-deletion correctly captures the data under discussion and cites additional examples for accurate predictions of the theory. One problematic example is given though:

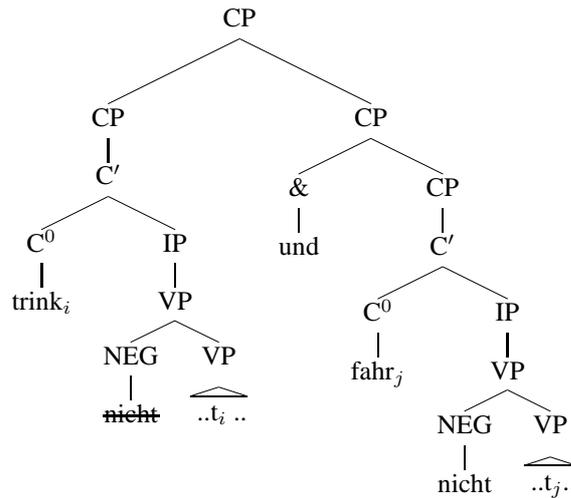
- (32) Maria sucht *einen Klempner* und Anna meidet einen Klempner.
Maria looks for a *plumber* and Anna avoids a plumber
'Maria is looking for a plumber and Anna avoids a plumber.'

Although the crucial reading is pretty hard to obtain, this might be a case where - contrary to the predictions of the PF-deletion account of RNR - the versions with and without deletion differ in what are possible readings (non-referential for the first indefinite, referential for the second: unobtainable if the indefinite is deleted, at least marginally possible if it is not). This, of course, requires a closer investigation of how indefinites behave in coordinations which would by far outreach the current undertaking. I hope to return to it elsewhere.

to the one assumed for the wide scope reading in (20) and involves PF-deletion at the right edge of the first conjunct:

(33) Trink ~~nicht~~ und fahr nicht!

(34)



While the first condition on RNR, namely that the material deleted at the right edge of the first conjunct has to be identical to the material at the right edge of the second conjunct, is clearly obeyed, this is maybe not so obvious for the second condition. Remember that RNR requires a contrast on the elements preceding respectively the gap and the overt material identical to it. I want to argue that the imperativized verbs in fact constitute the contrast required for RNR. Of course, phonologically this is hard to distinguish from the intonation contour triggered by the imperatives themselves. I think that it can nevertheless be shown, given that contrast minimally requires lexical diversity. So RNR and therefore FR should be excluded in cases in which we find two tokens of the same lexical verb (*go* in (35b)). This in fact seems to be born out:

- (35) a. Geh und (*nochmals) geh nicht!
 go.IMP and once-again go.IMP not
 b. Geh nicht und ^{???}(nochmals) geh nicht!
 go.IMP not and once-again go.IMP not

In fact, (35a) can only be understood as a contradictory utterance, but not as the (somewhat marginal) enforced negative imperative in (35b). (Therefore it does not allow the second instance to be modified with *nochmals* 'once again': the adverbial would require identity with the first imperative instead of opposition. On the other hand, conjoining two identical negative imperatives without *nochmals* seems extremely marginal, cf. (35b) for pragmatic reasons, I suppose.) So the lexical identity blocks an interpretation of (35a) along the lines of (36):

- (36) *Geh ~~nicht~~ und nochmals geh nicht.

Therefore, the availability of RNR and thus the FR seems in fact dependent on the lexical contrast given by the two verbs.

5. Independent evidence for RNR in similar constructions

Even if one could try to explain the simple cases like (3b) as non-Boolean VP conjunction, it is not clear how this could deal with verbs that take objects independently, but require the same particle:

- (37) Hör ihm und sieh ihr nicht **zu**!
 listen(-PRT).IMP him and look(-PRT).IMP her not PRT
 'Don't listen to him and don't look at her!
 (*'Listen to him and don't look at her!')

The only way for *hör* 'listen-PRT' to combine with the particle *zu* 'zu' which it obligatorily requires seems to be right node raising:

- (38) [_{CP}hör_i ihm_j ~~nicht~~ [_{VP}t_j [**zu** t_i]]] und [_{CP} sieh_k
 [listen(-PRT).IMP him ~~not~~ [[PRT]]] and [look(-PRT).IMP
 ihr_m nicht [_{VP}t_m [**zu** t_k]]]
 her not [[PRT]]
 'Don't listen to him and don't look at her!'

As predicted, the negation has to be copied along with the particle (the contrast being provided by the personal pronouns preceding the gap and the overt element respectively). Therefore, the reading conjoining a positive and a negative imperative is lost.

Likewise, it is correctly predicted that RNR and thus FR are blocked if what can be copied to the first conjunct is not final (in (39) only the negation could be copied, since the verb *schreib* 'write' can not be combined with the particle *zu* 'to')):

- (39) Schreib ihm und sieh ihr nicht zu!
 write.IMP him and look(-PRT).IMP her not PRT
 'Write him and don't look at her!
 (*'Don't write him and don't look at her!')

The readings for RNR-targeted quantifiers in object position conform to what is predicted by the deletion analysis:

- (40) Kauf dir und empfiehl Maria ein Buch!
 buy.IMP you.DAT and recommend.IMP Maria a book
 'Buy a book for yourself and recommend a book to Maria!'

(40) can indeed easily be understood as involving two different books.

A look at comparative data provides further evidence for the RNR analysis. French seems to mark the contrast between Boolean NS and putatively non-Boolean FR overtly (Caroline Féry, p.c.):

- (41) a. Ne bois et conduis pas!
 NEG_{cl} drink.IMP and drive.IMP NEG
 ‘Don’t both drink and drive!’ (= NS)
- b. Ne bois et ne conduis pas!
 NEG_{cl} drink.IMP and NEG_{cl} drive.IMP NEG
 ‘Don’t drink and don’t drive!’ (= FR)

Since, in French, negation is marked both pre- and postverbally, there remains an overt reflex of negation visible even where the postverbal marker *pas* has undergone RNR (viz. PF-deletion). Correspondingly, we get the FR for (41b), but not for (41a) which is an instance of true Boolean narrow scope conjunction.

Further evidence against explaining the FR in terms of the semantics of negation comes from the fact that non-logical adverbs can show the same ‘doubling’ behaviour:

- (42) Maria schläft und arbeitet viel.
 Maria sleeps and works much
 ‘Maria sleeps a lot and works a lot.’
 = Maria schläft viel und arbeitet viel.

The most natural reading for (42) is indeed that there are many events of Maria sleeping and many events of Maria working, and not, that Maria is a person who is involved in many events being characterized by her sleeping and working contemporaneously.

6. Conclusions

So after all, there doesn’t seem to be convincing evidence that the semantics of German negation should vary with distinctions in sentence mood. Nor need German and English opt for different interpretations of negation in their respective semantic algebras. It is rather the case that the morphosyntactic differences between English (3a) and German (3b) imperative conjunctions are not trivial, nor are those between German true imperatives (3b) and the suppletive infinitival constructions (16).

It could be shown that RNR conceived of as PF-deletion (for which independent evidence was cited) makes the correct predictions for the interpretation of negation and conjunction. Like and related constructions provided evidence against alternative accounts involving (sentence mood independent) non-Boolean

VP-conjunction which perhaps might have been a possible alternative for the simpler cases.

Acknowledgements

I would like to thank Caroline Féry, Hans-Martin Gärtner, Kleanthes Grohmann, Katharina Hartmann, Cécile Meier, Markus Steinbach, Anna Szabolcsi, Jochen Zeller, Ede and Malte Zimmermann for stimulating comments on prior versions of this paper which were presented at DGfS 2003 in München and GGS 2003 Köln. I'd like to thank these audiences, as well as the ConSOLE audience for their helpful comments. Special thanks go to Arthur Merin who not only commented on the first version, but also sent me his written work on the topic. I also want to thank Douglas Chorpita and Natalie Soondrum for their judgements on the English Data. Very special thanks go to Patrick Brandt and the anonymous peer reviewer who both provided a lot of helpful comments on the written version. Remaining errors and shortcomings are, of course, all mine.

References

- Aloni, M. (2003). Free choice in modal contexts. Ms, <http://www.xs4all.nl/~wander/aloni/>.
- Geurts, B. (2004). Entertaining alternatives: disjunctions as modals. Ms, University of Nijmegen.
- Hamblin, C. (1987). *Imperatives*. Blackwell, New York, Oxford.
- Hartmann, K. (2000). *Right Node Raising and Gapping*. John Benjamins, Amsterdam.
- Keenan, E. & L. Faltz (1985). *Boolean Semantics for Natural Language*. Reidel, Dordrecht.
- Krifka, M. (1990). Boolean and Non-Boolean 'and'. Kálmán, L. & L. Pólos (eds.), *Papers from the Second Symposium on Logic and Language*, Akadémiai Kiadó, Budapest.
- Krifka, M. (2001). Quantifying into question acts. *Natural Language Semantics* 9, pp. 1–40.
- Löbner, S. (2000). Polarity in natural language: predication, quantification and negation in particular and characterizing sentences. *Linguistics and Philosophy* 23, pp. 213–308.
- Lohnstein, H. (2000). *Satzmodus - kompositionell (Sentence mood - compositionally)*. Akademie Verlag, Berlin.
- Merin, A. (1992). Permission sentences stand in the way of Boolean and other lattice-theoretic semantics. *Journal of Semantics* 9, pp. 95–162.
- Merin, A. (2002a). Pragmatic ontology in Aristotle's organon. *Forschungsberichte der DFG-Forschergruppe Logik in der Philosophie*, Nr. 74, Universität Konstanz.
- Merin, A. (2002b). The language of desire. Conference Talk at 'In the Mood', 21.-23. 7. 2003, Universität Frankfurt.
- von Stechow, A. (2002). Temporal prepositional phrases with quantifiers: some additions to Pratts and Francez (2001). *Linguistics and Philosophy* 25, pp. 755–800.
- Szabolcsi, A. & B. Haddican (2003). Conjunction meets negation: a study in cross-linguistic variation. Ms, NYU.
- Wrátil, M. (2000). Die Syntax des Imperativs (The syntax of the imperative). *Linguistische Berichte* 181, pp. 71–118.
- Zimmermann, T. E. (2000). Free choice disjunction and epistemic possibility. *Natural Language Semantics* 8, pp. 255–290.