Different Alternatives for Topics and Foci: Evidence from Indefinites and Multiple *wh*[*]

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Abstract

In gapping, topical indefinites as well as *wh*-phrases can contrast with surface-identical antecedents if the contrast involved is the first of the two (or more) contrast pairs in the gapping coordination. This is not possible for most other types of expressions. We argue that both topical indefinites and *wh*-phrases introduce a discourse referent with a fixed address, on the basis of which referents introduced by surface-identical expressions can be contrasted. For the indefinites, we argue that the first contrast pair is a pair of contrastive topics which can, at the same time, be a pair of aboutness topics. These introduce individual addresses (Reinhart 1981). For *wh*-phrases we follow the assumption that they introduce discourse referents by presupposition. Multiple *wh*-interrogatives then introduce functions by presupposition whose domain is provided by the first *wh*-phrase. The function is specified by giving its extension, i.e. the respective pair-list.

1 Introduction

In this paper we explore alternative sets in contrastive constructions and argue that different information structural units can come with different alternative sets, more specifically, the alternatives coming with (contrastive) topics can be different from the ones coming with (contrastive) foci. This is surprising for some accounts of contrastive to-

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pics (e.g. Büring 1997, 2003) and calls for an analysis of alternative formation that takes into account the specifics of topics and foci.

Our test case are sentences with gapping, which is an ellipsis type that typically involves two pairs of contrasting elements, see (1) for a German example. The contrasting elements are *student-lecturer* and *director-dean*. Small caps indicate pitch accents, a forward slash marks a rising accent, a backward slash marks a falling accent.

(1) Ein Stu/DENT schrieb dem Di/REKtor und ein Do/ZENT dem De\KAN.
a student wrote the director and a lecturer the dean
'A student wrote to the director and a lecturer to the dean.'

In some cases, surprisingly from the viewpoint of ellipsis, there is no contrast required on the surface for one of the contrast pairs. The two conjuncts in (2) have surface-identical[1] indefinite subjects. In (3) we find surface-identical *wh*-phrases as subjects:

(2) /EIn Student schrieb dem Di/REKtor und /EIn Student dem De\KAN.
one student wrote the director and one student the dean
'One student wrote to the director and one student to the dean.'

(3) /WELcher Student las welches /BUCH
Which student read which book
und /WELcher Student welchen Ar/TIkel
and which student which article
'Which student read which book and which student which article?

Obviously, there IS a contrast here – we understand these sentences as involving different student individuals. As the translations indicate, the effects are the same in English.

In (2) and (3), the surface-identical contrast pair is the first of the two contrast pairs. In (4) and (5) below, it is the second. In the German data (4a, 5a), subject and object are swapped, which in general is possible because of the relatively free word order and the lack of superiority effects in German. The English cases in (4b, 5b) are adapted so that the order of subject and object is maintained. In either case, the result of placing the surface-identical contrast pair behind the other contrast pair is ungrammatical.

(4) a. *Dem Di/REKtor schrieb /EIN Student und dem De/KAN \EIN Student.
b. *The di/RECtor wrote to /ONE student and the /DEAN to \ONE student.

(5) a. *Welches /BUCH las /WELcher Student und welchen Ar/TIkel /WELcher Student?
b. *Which /STUdent read /WHICH book and which /TEAcher /WHICH book?

[1]The pitch accents are (can be) the same for the two subjects (typically L*H). The second conjunct normally occurs with register down step, see e.g. Féry & Hartmann (2005). We gloss over this aspect.

It is often assumed that the contrastive elements in gapping are foci (e.g. Hartmann 2000) but some analyses suggest that the first contrast pair is a pair of (contrastive) topics, and the second, a pair of contrastive foci (Repp 2005; Winkler 2005). We show that this latter position is what our data reflect with the addition that the contrastive topics can also be aboutness topics. These are different from contrastive topics in the sense of e.g. Büring (1997, 2003), for which the alternative set is built in the same way as for contrastive foci. Aboutness topics can take recourse to different alternative sets from Büring's contrastive topics when contrasted. This is because they always are linked to 'fixed' discourse referents whereas foci are not. Similarly, *wh*-interrogatives introduce discourse referents whose reference is fixed: like aboutness topics, they have an address.

2 Topical indefinites and contrast

2.1 Marking the indefinite as topical

The data in (2) have some features which deserve closer attention. In the German sentence, the indefinites carry a rising accent on the determiner. This is not the case in the run-of-the-mill gapping example in (1). Indeed, for (2) to be felicitous, the determiner must be accented, cf. (6a,b). Similarly, the English variant (= the translation of (2)), needs accented *one* (or unaccented *some*) rather than *a* (accented or not), see (6c):

(6) a. *Ein Student schrieb dem Di/REKtor und ein Student dem De/KAN.
b. *Ein Stu/DENT schrieb dem Di/REKtor und ein Stu/DENT dem De\KAN.
c. *A student wrote to the di/RECtor and a student _ to the \DEAN.

An obligatory accent on the determiner in German has been observed to be typical of topical indefinites (e.g. Endriss 2006; Gundel 1985; Jacobs 1996 (i-specification); Molnár 1993; Umbach 2004). Non-indefinite topics are usually deaccented because they are given. Topical indefinites are new. This is marked with an accent on the determiner. Also, an accent on the determiner has been observed to occur in constructions where the indefinite takes wide scope over other operators (Endriss 2006), or, depending on the theory, where the indefinite is interpreted as specific. The same holds for the determiners *one* and *some* in English (e.g. Fodor & Sag 1982; Pafel 2005). Wide scope and specificity have been associated with aboutness, i.e. indefinite topics often are specific and always take wide scope (Endriss 2006). Consider (7), as well as (8), which is the direct translation of (7), adapted from Endriss (2006: 85f.). In the a-cases, the indefinite *a mathematician* takes narrow scope with respect to *none of my friends*. In the b-cases, in contrast, it is much easier for the indefinite to take wide scope.

(7) a. Keiner meiner Freunde lud einen Mathematiker zu seiner Party ein.
b. Keiner meiner Freunde lud /EInen Mathematiker zu seiner Party ein.
none of.my friends invited a/one mathematician to his party PART

(8) a. None of my friends invited a mathematician to his party.
b. None of my friends invited some/one mathematician to his party.

2.2 Different kinds of determiners

Another piece of evidence for the aboutness topichood of the first contrast pair in gapping comes from the kind of determiners that can occur in this position. These are essentially the indefinite article and unmodified numerals. Quantificational DPs headed by other determiners can only be felicitously contrasted if there is a surface contrast:

(9) a. Three children chose the book and three (children) the CD.
b. *Less than three children chose the book and less than three (children) the CD.
c. Less than three children chose the book and less than four (children) the CD.

The quantifiers that are happy with contrast under surface identity are those quantifiers that can occur in left dislocation constructions in German, which have been suggested to mark the left dislocated element as an aboutness topic (Frey 2005):

(10) /DREI Kinder, die kennt doch jeder: Heidi, Alice und Kevin.
three children them knows PART everyone Heidi, Alice and Kevin
'Three children, everybody knows them - Heidi, Alice und Kevin.'

(11) *Weniger als /DREI Kinder, die kennt doch jeder.
'Less than three children, everybody knows them.'

According to Ebert & Endriss (2004), these quantificational determiners can occur in topical DPs because a discourse referent can be formed from them: the minimal witness set, MWS, (Barwise & Cooper 1981) of these quantifiers delivers a 'sensible representative', i.e. sets are available which can be turned into (atomic or sum) individuals. For instance, *three children* is the set of all sets containing three children and a corresponding MWS is a set containing three children and nothing else. This is a sensible representative. The sum individual consisting of the three children contained in the MWS can function as the topic. For *less than three children*, the (in this case: unique) MWS is the empty set. This is no sensible representative. Consequently, no discourse referent can be formed. The quantifier cannot occur in a topical DP.[2]

[2]We simplify the analysis by Ebert & Endriss (2004). They can also account for DPs containing e.g. *at least* or *more than* which cannot be topical but for which the MWS delivers a sensible discourse referent.

2.3 Topical indefinites, address creation and contrast

We assume with Reinhart (1981) that topics are discourse referents with a discourse address. For topical indefinites, which introduce novel discourse referents, this means that they fix an address for a discourse referent. This is crucial – it is not sufficient to rely on the mere introduction of a discourse referent. Any indefinite can do that. This is Heim's (1982) novelty condition:

(12) Harvey read a book and Pete read a book.
a. The books were by Konsalik
b. #The book was by Konsalik.

Yet, while it is possible to be ignorant about the referential address of 'ordinary' indefinites – there is none –, this is impossible for topical indefinites. (13a), with non-topical indefinites, can be followed by a clause like (14). (13b), with topical indefinites, cannot.

(13) a. Max hat ein Buch gelesen und Maria hat ein Buch gelesen.
Max has a book read and Maria has a book read
'Max read a book and Maria read a book'
b. /EIN Buch hat \MAX gelesen und /EIN Buch hat Ma\RIa gelesen.
One book has Max read and one book has Maria read
'One book, Max read and one book, Maria.'

(14) Maybe it was the same one. (ok after (13a), but not (13b))

Note that 'knowing the discourse-referential address of an indefinite' is meant to capture the distinctness of referents and not their actual identity. The referent itself might be unknown to the speaker (cf. Endriss 2006):

(15) If some relative of mine dies, I get rich. I wonder who that might be.

The address-establishing act can be carried out several times. During address creation, a label is created for each of these individuals, and the comment coming with the topic is stored under the address. When we contrast topical indefinites we contrast the individuals that are created on the basis of the denotations of the respective quantificational DPs.[3] Thus, a sentence like (2), repeated below in English as (16), is interpreted as shown in (17). Note that the minimal witness sets are assumed to be introduced by a separate speech act. What is contrasted are the assertions.

(16) One student wrote to the director and one student to the dean.

[3]Eckardt (2002) investigates the alternatives that are available to topics with accented determiners and concludes that one must distinguish referential topics from denotational topics. Referential topics have discourse referents in their alternative sets, denotational topics have denotations in their alternative sets.

(17) wrote_to_director($\sum${x: a(x)}) $\wedge$ wrote_to_dean($\sum${x: b(x)})
where a and b are the respective minimal witness sets

In contrast to topical indefinites, topical definites cannot be contrasted without a denotational contrast:

(18) a. *The /BOY is reading Tom /SAWyer and the /BOY Harry \POTter.
b. */THE boy is reading Tom /SAWyer and /THE boy Harry \POTter.

This is because topical definites pick up addresses that are already in the discourse model. These addresses are identified via the linguistic expressions. If they are the same the addresses are the same: definite expressions come with a uniqueness condition. As we saw above (ex. 6), non-topical indefinites can neither be contrasted without denotational contrast: they do not establish an address that could be contrasted with another address. On the other hand, contrast between discourse referents which on the surface are identical is not reserved for indefinite topics. Under specific circumstances it is also available for foci. For instance, referential contrast can be evoked with an accent on demonstrative determiners (here synonymous with the definite determiner) if combined with deictic gestures, e.g. the speaker in (19) must point to two different biscuits:

(19) Ich will nicht [/DEN Keks $_{FOC}$], sondern [\DEN (Keks) $_{FOC}$].
I want not the biscuit but the biscuit
'I don't want this biscuit but that one.'

Correction structures like (19) are generally held to involve focus (Jacobs 1991; Drubig 1994; Repp 2005). (19) is felicitous because demonstratives are directly referential, which means that the two demonstratives here denote two different individuals. Another case where focus alternatives can be surface-identical is when they are bound pronouns as in (20). (20) is a gapping example. As mentioned above, we assume that the post-gap material is focal. The two pronouns *his* and *his* are bound by two referentially different antecedents. This automatically makes them referentially distinct:

(20) /PEter called /HIS son and /JOHN \HIS son.

Thus, for focus alternatives to be able to contrast without surface contrast, it is necessary that either the focused elements are directly referential themselves or that they are made referentially distinct via binding to different referents.

3 *Wh*-questions

3.1 Common features of indefinites and *wh*-phrases

We said that topical indefinites first establish a discourse address, and then some information is stored under this address. Some researchers have suggested that this can be captured via presuppositions (e.g. Reinhart 1981; Cresti 1995; Yeom 1998; Portner & Yabushita 1998). The idea is that topical indefinites presuppose their existence and that these presuppositions update the common ground first. This opens up an interesting parallel with *wh*-interrogatives. Many analyses of interrogatives assume that a *wh*-phrase introduces a referent by presupposition (e.g. Comorovski 1996; Dayal 1996; Karttunen 1977; Hintikka 1978). Also by presupposition, the interrogative says something about the referent, e.g. in (21) *x called John.* [4]

(21) Who called John? *presupposes:* Someone called John.

Importantly, the interrogative requires that more be said about the referent, that its denotation be revealed. Thus, something like an address is created under which the information to be supplied by the answer is to be stored.[5] This explains why a *wh*-phrase can be form-identical in gapping, see (22).

(22) Who called John and who Mary?

A new address is created for every *who*. This does not explain, however, why there is an asymmetry in a multiple *wh*-question between the first *wh*-phrase and the second one, which will be the topic of the next subsection.[6]

[4]These data are not undebated (e.g. Groenendijk & Stokhof 1984; Ginzburg 1995), mainly because of examples like *Who called John? – Nobody called John.* We consider these as instances of presupposition protest (also see the above references). Haida (2003) offers (i) as a crucial piece of evidence in favour of a presuppositional analysis: A *who*-question cannot be answered by the indefinite *somebody* because the existential meaning comes already with the question:

(i) Who called John? – *Somebody called John.

[5]The presuppositions introduced by topical indefinites and those introduced by *wh*-phrases differ here. For topical indefinites only the existence of the individual corresponding to the topic expression is presupposed. For *wh*-phrases the existence of the individual corresponding to the *wh*-expression is presupposed and this individual is further restricted by what is predicated of it in the interrogative. Another difference is that the individuals introduced by the *wh*-words in a conjoined question like (22) in the main text can be identified as being the same in an answer, e.g. *Peter did*. This is not surprising given the ignorance of the person asking the question about the respective referents.

[6]The idea that *wh*-phrases and indefinites have much in common is of course not new. It is well known that *wh*-phrases can serve as antecedents for anaphora, see for instance (i). Comorovski (1996) speculates that the presupposition introduced by the *wh*-question is responsible for this. In various languages indefinite pronouns can serve as ordinary indefinites or as question terms, depending on prosodic or morphological marking. Also see Haida (2007) on this.

(i) Who$_i$ polished this cupboard and which polish did he$_i$ use? (Comorovski 1996)

3.2 Multiple *wh*-phrases

Consider the example in (23), which, in its pair-list reading presupposes that there is a set of kisser-kissed pairs. The identity of these pairs is to be provided by the answer.

(23) Who kissed whom?

For a gapping case like (24) this reads as follows: (24) presupposes that there is a set of people such that each member of this set kissed a Berliner and there is a set of people such that each member of this set kissed a Londoner, i.e. there is a *Kisser-Kissed Berliner* and a *Kisser-Kissed Londoner* pair-list.

(24) Who kissed which Berliner and who which Londoner?

We assume that multiple *wh*-questions ask for a function whose domain is provided by the fronted *wh*-question, as given schematically in (25). *f* is the function asked for, *Dom(f)* is the domain of this function and *Z* is the relation holding between the elements in the domain and the range of the function (Higginbotham & May 1981; Krifka 2001). The function is then specified by giving its extension, i.e. the respective pair-list.

(25) $\lambda Z \lambda f.\ \forall x[x \in \mathrm{Dom}(f) \rightarrow Z(f(x))(x)]$

There is a clear connection between this analysis and Kuno's (1982) sorting key hypothesis, according to which the relative order of the *wh*-terms in a multiple *wh*-question is mirrored by the answer. This can be seen as a consequence of the fact that the first *wh*-term provides the domain of the function, while the second provides the range.

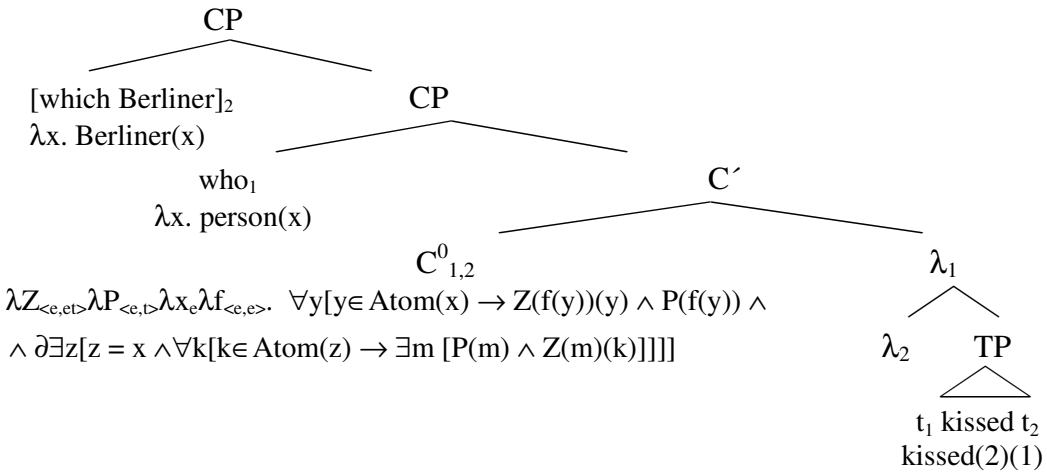
Let us turn to the details of our analysis of multiple *wh*-questions. First, we assume *wh*-terms to be of type <e,t>, e.g. *who* denotes the predicate *λx. person(x)*. Second, we assume that the *wh*-term left in situ at the surface moves at LF, adjoining directly above the overtly fronted one. The traces left behind by both are interpreted as free variables of type *e*. Third, we assume that the covert operator present in the C-head of multiple *wh*-questions denotes the object given in (26). The presupposition discussed above is combined with the truth conditional content via Beaver's (2001) presupposition operator ∂, i.e. the condition to which ∂ has been prefixed is presupposed, not asserted.

(26) $\lambda Z_{<e,et>} \lambda P_{<e,t>} \lambda x_e \lambda f_{<e,e>}.\ \forall y[y \in \mathrm{Atom}(x) \rightarrow Z(f(y))(y) \wedge P(f(y)) \wedge$
$\wedge\, \partial \exists z[z = x \wedge \forall k[k \in \mathrm{Atom}(z) \rightarrow \exists m\ [P(m) \wedge Z(m)(k)]]]]$,
where *Atom* is the function mapping a plural entity onto its atomic parts.

The LF of the first conjunct of (24) is given in (27). Note that the covertly moved *wh*-term, i.e. the one providing the predicate to be satisfied by the elements in the range of the function (*which Berliner*), retains its original type to combine with the operator in

C^0, to whose maximal projection it is adjoined at LF. The overtly moved *wh*-term, which provides the domain of the function, in contrast, is shifted to an object of type *e*. This is because it moves to a topic position, see Jaeger (2004) and Grohmann (2006) for empirical arguments that overtly fronted *wh*-terms are topics. Accordingly, elements located in this position have to be of the type of individuals, as argued in section 2.2.

(27) Who kissed which Berliner?



The shift to an individual is done via a covert sigma-operator which applies to the set denoted by the *wh*-term and returns the maximal element contained in that set. Furthermore, we assume that σ, whose overt counterpart is the definite determiner, just like this determiner comes with a covert C(ontext)-variable. This gets resolved to a contextually salient predicate (see von Fintel 1994 for arguments that quantificational determiners as well as adverbial quantifiers introduce such variables). The (denotation of the) *wh*-term in Spec., CP above is thus shifted as given in (28):

(28) $\lambda x.\ person(x) \Rightarrow \lambda P.\ \sigma\{x: P(x) \wedge C(x)\}\ (\lambda x.\ person(x)) =$
$\sigma\{x: person(x) \wedge C(x)\}$

Note that λ-abstraction over the variables denoted by the traces of the two *wh*-terms is triggered not directly below the respective moved item (as in Heim & Kratzer 1998), but directly below the operator in C^0, thus creating the relation *Z* this operator combines with first. We suggest that this is because the operator in C^0 is coindexed with the two *wh*-terms. The sister of the operator in C^0 thus translates as *λyλx. kiss(y)(x)*, and the LF in (27) can be interpreted as shown in (29):

(29) $\lambda Z_{<e,et>}\lambda P_{<e,t>}\lambda x_e\lambda f_{<e,e>}.\ \forall y[y\in \mathrm{Atom}(x) \rightarrow Z(f(y))(y) \wedge P(f(y)) \wedge \partial\exists z[z = x \wedge\forall k[k\in \mathrm{Atom}(z) \rightarrow \exists m\ [P(m) \wedge Z(m)(k)]]]$
$(\lambda y\lambda x.\ \mathrm{kiss}(y)(x))\ (\sigma\{x:\ \mathrm{person}(x) \wedge C(x)\})\ (\lambda x.\ \mathrm{Berliner}(x)) =$

$\lambda f{<}e,e{>}.\ \forall y[y\in \mathrm{Atom}(\sigma\{x:\ \mathrm{person}(x) \wedge C(x)\}) \rightarrow \mathrm{kiss}(f(y))(y) \wedge \mathrm{Berliner}(f(y)) \wedge \partial\exists z[z = \sigma\{x:\ \mathrm{person}(x) \wedge C(x)\} \wedge\forall k[k\in \mathrm{Atom}(z) \rightarrow \exists m\ [\mathrm{Berliner}(m) \wedge \mathrm{kiss}(m)(k)]]]]$

The C-variable in the denotation of the (type-shifted) topical *wh*-term in Spec,CP is resolved in the following way. It is well known that C-variables in the restrictor of adverbial quantifiers are resolved on the basis of presuppositions introduced by lexical material contained within the respective clause (Berman 1991). Let us assume that the same happens in the present case. The presupposition is that there is a sum individual *z* such that for all atoms *k* this individual consists of, there is a Berliner *m* such that *k* kissed *m*. The C-variable gets resolved to the corresponding predicate $\lambda x.\ \forall k[k\in Atom(x) \rightarrow \exists m\ [Berliner(m) \wedge kiss(m)(k)]]$. Once this is done, the presupposition becomes redundant and we get (30) as the denotation of (27). After applying the same strategy to the second conjunct of (24), which is repeated below as (31a), we get (31b). The objects denoted by the two (overtly) fronted and thus topical *wh*-terms in the two conjuncts are underlined. They differ in their denotations: in conjunct 1 we have the maximal sum individual consisting of people who kissed a Berliner, and in conjunct 2, the maximal sum individual consisting of people who kissed a Londoner.

(30) Who kissed which Berliner?
$\lambda f_{<e,e>}.\ \forall y[y\in \mathrm{Atom}(\underline{\sigma\{x:\ \mathrm{person}(x) \wedge \forall k[k\in \mathrm{Atom}(x) \rightarrow \exists m\ [\mathrm{Berliner}(m) \wedge \mathrm{kiss}(m)(k)]]\}}) \rightarrow \mathrm{kiss}(f(y))(y) \wedge \mathrm{Berliner}(f(y))]$

(31) a. Who (kissed) which Londoner?
b. $\lambda f_{<e,e>}.\ \forall y[y\in \mathrm{Atom}(\underline{\sigma\{x:\ \mathrm{person}(x) \wedge \forall k[k\in \mathrm{Atom}(x) \rightarrow \exists m\ [\mathrm{Londoner}(m) \wedge \mathrm{kiss}(m)(k)]]\}}) \rightarrow \mathrm{kiss}(f(y))(y) \wedge \mathrm{Londoner}(f(y))]$

The *wh*-terms can thus function as contrastive aboutness topics. The crucial step that made this possible is the shift via the σ-operator: σ comes with a C-variable that gets resolved to the predicate(s) responsible for the semantic difference between the two *wh*-terms, where the respective predicate is part of the presupposition coming with the operator in $C^{0.}$

As observed in the introduction, only the first contrast pair can be surface-identical. Here is a minimal variant of (24), where the second contrast pair is surface-identical.

(32) *Which Berliner kissed who and which Londoner who?

In this case the *which*-phrases are in topic position and thus get shifted via the σ-operator, while the *wh*-pronouns retain their original denotation as predicates. We thus get (33a, b) as the denotations of the two conjuncts:

(33) a. $\lambda f_{<e,e>}.\ \forall y[y \in Atom(\sigma\{x: Berliner(x) \wedge \forall k[k \in Atom(x) \rightarrow \exists m\ [person(m) \wedge kiss(m)(k)]]\}) \rightarrow kiss(f(y))(y) \wedge \underline{person(f(y))}]$

b. $\lambda f_{<e,e>}.\ \forall y[y \in Atom(\sigma\{x: Londoner(x) \wedge \forall k[k \in Atom(x) \rightarrow \exists m\ [person(m) \wedge kiss(m)(k)]]\}) \rightarrow kiss(f(y))(y) \wedge \underline{person(f(y))}]$

(33) shows that the two phonogically identical *wh*-terms are identical at the level of semantic interpretation, too: they both denote the underlined objects. Therefore, the in-situ *wh*-items cannot be contrasted. Being foci, not topics, there is no way for them to receive a non-identical interpretation. Consequently, (32) is ungrammatical.

3.3 Open questions

There are some examples that are problematic for our account. For instance (34) is well-formed even though not only the first (and thus topical), but also the second pair of *wh*-terms is surface-identical. In our account, they are interpreted as shown in (35), which shows that there is no contrast for the second contrast pair.

(34) /WER hat /WEN am /MONtag geküsst und /WER /WEN am /DIENStag?
who has whom on Monday kissed and who whom on Tuesday
'Who kissed whom on Monday and who whom on Tuesday?'

(35) a. $\lambda f_{<e,e>}.\ \forall y[y \in Atom(\sigma\{x: person(x) \wedge \forall k[k \in Atom(x) \rightarrow \exists m\ [person(m) \wedge kiss\_on\_Monday\ (m)(k)]]\}) \rightarrow kiss\_on\_Monday(f(y))(y) \wedge \underline{person(f(y))}]$

b. $\lambda f_{<e,e>}.\ \forall y[y \in Atom(\sigma\{x: person(x) \wedge \forall k[k \in Atom(x) \rightarrow \exists m\ [person(m) \wedge kiss\_on\_Tuesday\ (m)(k)]]\}) \rightarrow kiss\_on\_Tuesday(f(y))(y) \wedge \underline{person(f(y))}]$

One possible explanation is that the object *wh*-terms in (35) are neither topics nor foci (rather, the temporal PPs are the respective foci). Therefore, their identity does not matter. But then, it should be possible to elide them, which is not borne out by the facts:

(36) */WER hat /WEN am /MONtag geküsst und WER _ am /DIENStag?
'Who kissed whom on Monday and who _ on Tuesday?'

We tentatively assume that elision is impossible here because the range of the respective function needs to be provided. Interestingly, a variant of (34) given in (37a), where the order of object *wh*-term and PP has been switched, is ungrammatical. (37b) shows that this word order is available in simple clauses, i.e. the culprit is the gapping construction:

(37) a. */WER hat am /MONtag /WEN geküsst und /WER am /DIENStag /WEN?
b. WER hat am MONtag WEN geKÜSST?

At first sight, gapping sentences involving *which*-phrases seem to behave the same:

(38) a. /WER hat /WELche Kugel in die /RECHte Ecke eingelocht
Who has which ball in the right corner potted
und /WER /WELche Kugel in die /LINke (Ecke)?
and who which ball in the left corner
'Who potted which ball in the right corner and who which ball in the left one?'

b. */WER hat die /ROte Kugel in /WELche Ecke eingelocht
Who has the red ball in which corner potted
und /WER die /GRÜne Kugel in /WELche Ecke?
and who the green ball in which corner?'
'Who potted the red ball in which corner and who the green ball in which corner?'

Interestingly, (38b) improves considerably if the second *which*- phrase is deaccented:

(39) ?/WER hat die /ROte Kugel in welche Ecke eingelocht
und /wer die /GRÜne Kugel in welche Ecke?

For the *wer*-case, however, deaccenting leads to a different interpretation: deaccented *wh*-pronouns can only be interpreted as unspecific indefinites in German:

(40) */WER hat am /MONtag wen geküsst und /WER am /DIENStag wen?
who has on Monday someone kissed and who on Tuesday s.o.
'Who kissed someone on Monday and who someone on Tuesday?'

If we assume that topics cannot be clause-final (which would need closer scrutiny), we could say that the second *wh*-phrase, if it occurs earlier in the clause, can be interpreted as a (subordinated) topic. Adopting this analysis would force us to assume a second topic position below C, which is dependent on the topic in Spec,CP. Furthermore, the operator in C must get adapted, i.e. it must take two individuals as arguments.

4 Conclusion

In this paper we argued that both indefinites and *wh*-phrases can be contrasted under surface identity if they occur in clause initial position, where they can be interpreted as aboutness topics. If they are to function as aboutness topics, they have to be shifted to the type of individuals. In the case of indefinites, which are generalized quantifiers, a minimal witness set has to be created. Since these witness sets can be different even if the quantifier is the same, we have two different individuals, which accordingly can be contrasted. In the case of *wh*-terms, which we assume to denote sets, a σ-operator can be applied to the respective set directly. Distinctness in this case comes about via the

resolution of the C-variable coming with the σ-operator to different predicates on the basis of presuppositions coming with the operator in C^0.

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