RECONSTRUCTION AND DETERMINER RAISING

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1. INTRODUCTION[1]

In this paper, I would like to investigate the consequences of employing the process of covert Determiner Raising (Dobrovie-Sorin 1987) in the analysis of three at first sight distinct phenomena.

First, a novel approach towards the representation of semantically weak readings of NP's will be presented that closely follows Heim (1992). Instead of analyzing weak readings as being bound by a syntactically projected ∃-closure operator, it is proposed that they should be derived in a compositional way with the help of a categorematic lexical entry for weak determiners in conjunction with Determiner Raising ('DR') at LF. The resulting theory offers a principled account of the effects related to Diesing's Mapping Hypothesis (Diesing 1990, 1992). It will be shown that the new system makes it possible to directly relate the distribution of weak NP's to the general lack of reconstruction in scrambling chains.

Second, the constraints on DR will be shown to be (to a large extent) the same that account for the properties of reconstruction in scrambling chains in German.

Thirdly, it is argued that DR and the Copy and Delete mechanism - which was initially developed as a mode of representation for reconstruction phenomena (Chomsky 1992) - are the underlying source of Split-Topicalization. This conception allows us to subsume two facts about NP's that were given a distinct explanation in Diesing (1990) under a common analysis: It will be demonstrated that both Mapping effects and the dependence of NP-Split on the location of the NP in the tree can now be seen as being subject to the restrictions on DR.

The paper begins with a presentation of a new compositional semantics for weak readings of NP's, which will provide the background of the discussion. Section 3 turns to a reinterpretation of Diesing's Mapping Hypothesis in terms of the constraints on subextraction. In section 4, empirical evidence in favor of the analysis is presented, that will turn out to pose problems for competing theories of weak NP's. Finally, section 5 investigates the correlation between reconstruction, weak readings and Split-NP constructions.

[1]I would like to thank Molly Diesing, Irene Heim, Kyle Johnson and Angelika Kratzer for valuable comments on previous versions. All errors are my own.

2. THE REPRESENTATION OF WEAK READINGS

2.1. BACKGROUND

In Diesing (1990, 1992) and Diesing & Jelinek (1995) indefinites and weak NP's are taken to denote either generalized quantifiers (type <<e,t>t>) or cardinality predicates (type <e,t>). In their weak[2] reading, indefinites are translated as cardinality predicates which introduce an unbound variable which is unselectively bound by existential closure later on in the derivation. This conception is incompatible with a semantic module that is based on Functional Application, Predicate Modification and Function Composition as only modes of composition (Heim and Kratzer, to appear). To illustrate with an example: Sentence (1)a is arguable associated with a semantic output as under (1)b:

(1) a. Mary saw some movie
b. $\exists$x [movie (x) & see (x)(Mary)]

However, if the weak object *some movie* is translated as a predicate of type <e,t>, it will apply to the free variable introduced by the indefinite first, resulting in the formula $[movie_{<e,t>}(x)]_{<t>}$. Assuming that extensional verbs subcategorize for individuals only, the selectional requirements of the transitive predicate can then no longer be met, because the sister of the verb is not of type <e>:

(2) $\exists x\ [see_{<e<e,t>>}\ (movie_{<e,t>}\ (x)\ )_{<t>}(Mary)]$: Type mismatch

The type mismatch in (2) reflects the insight that in a Heim-Kamp style analysis of indefinites, indefinite NP's are treated as conditions on variables; these conditions are conjoined with other restrictions, such as the ones set up by the main predicate, to yield an open formula which is finally bound off by existential closure. If one wants to adhere to a more traditional, LF-oriented semantics however, it seems desirable to look for some other device for the representation of weak readings.

2.2. AN ALTERNATIVE ACCOUNT OF WEAK READINGS

In the current subsection, a modified version of Heim's (1992) compositional interpretation of weak NP's will be presented, which dispenses with existential closure operators. The system to be developed combines a restrictionless translation of weak determiners (Heim 1992) and the syntactic process of covert Determiner Raising (Dobrovie-Sorin 1987, Heim 1992).

To begin with, I assume that all verbal arguments in English leave VP at LF and reside in their respective Case positions (SpecAgrSP/OP) at LF (Chomsky 1992, 1994). Verb movement is taken to be semantically vacuous and undone prior to interpretation:

(3) a. Mary saw Pulp Fiction
b. $[_{AgrSP}\ Mary_i\ [_{AgrOP}\ Pulp\ Fiction_j\ [_{VP}\ t_i\ saw\ t_j]]]$

In semantics, the indices associated with movement of NP's are interpreted as λ-binders, adopting

[2] By 'weak reading' I refer to the presuppositionless or non-specific interpretation of NP's headed by a member of the lexical class of weak determiners identified by Milsark (1977).

a suggestion by Heim & Kratzer (to appear).[3] Thus, in the simple transitive clause in (3) which holds no quantificational terms, the VP node denotes a truth value. The VP-internal traces are abstracted over and substituted by the respective arguments in course of the semantic computation:

(4) $[_{AgrSP}$ Mary $[\lambda i\ [_{AgrOP}$ Pulp Fiction $[_{Agr'}\ \lambda j\ [_{VP}\ t_i$ saw $t_j]]]]]$

$[\![[_{VP}\ ]]\!]$ = saw$(t_j)(t_i)$

$[\![[_{AgrOP}\ ]]\!]$ = λj[saw(i)(t_i)](Pulp Fiction) =

= [saw(Pulp Fiction)(t_i)]

$[\![[_{AgrSP}\ ]]\!]$ = λi [saw(Pulp Fiction)(i)] (Mary) =

= saw(Pulp Fiction)(Mary)

Consider now a minimal variant of (3), in which the object is realized as a weak NP.

(5) Mary saw some movie

In a first step towards representing the weak interpretation, I will follow Dobrovie-Sorin (1987) and Heim (1992) in severing the determiner from its common noun by DR at LF.[4] DR will be taken to target the next maximal projection dominating the NP as whose head the determiner serves. Since the object resides in SpecAgrOP at LF, application of DR leads to an LF-output representation as in (6)b, in which determiner and restriction are string-adjacent:[5]

(6) a. $[_{AgrSP}$ Mary$_i$ $[_{AgrOP}$ $[$some movie$]_j$ $[_{VP}\ t_i$ saw $t_j]]]$

b. $[_{AgrSP}$ Mary$_i$ $[_{AgrOP}$ some$_k$ $[_{AgrOP}$ $[t_k$ movie$]_j$ $[_{VP}\ t_i$ saw $t_j]]]]$

It is evident, that (6)b cannot be compositionally interpreted by the same translation procedure that was employed in the derivation of (3) or - alternatively - by using a Generalized Quantifier account, which assigns to the determiner a meaning of type <<e,t>,<<e,t>t>>. While the first approach is inapplicable to sentences involving quantified terms, the second one leads to structures with type mismatch. Heim (1992) defines however a categorematic translation rule for weak determiner, which can be directly applied to the LF-output (6)b.

According to Heim (1992), weak determiner are not treated as cardinality predicates, but rather as characteristic functions of predicates with type <<e,t>t>.[6] Existential closure is

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[3] Thus, an LF of the form (i) is accordingly interpreted as given under (ii):

(i) $[NP_i$ ... $[...t_i$ ...]]

(ii) [NP $[\lambda i$ ... [...i...]]]

For reasons of concreteness, the λ-binder will be assumed to be located in the X° that heads the maximal projection whose specifier is the target of movement.

[4] Heim (1992) furthermore assumes that the head noun incorporates into the verb. On differences between Heim (1992) and the present system see footnote 7.

[5] DR has to be assumed to be local, otherwise it would permit the derivation of unattested wide scope readings of weak NP's in examples like (i):

(i) Mary didn't see a movie

In its weak reading, the scope order of negation and the indefinite in (i) reflects surface word order.

[6] Assume that weak readings are distinguished from their strong counterparts in that the former lack an existence presupposition. Suppose furthermore that the presupposition is correlated with the presence of a restriction of the determiner (Diesing 1990). It follows that the restrictionless interpretation of the determiner functions as the

introduced directly in the lexical entry of the determiner and not by some abstract operator. The weak, restrictionless version of *some* would e.g. receive the lexical entry below:

(7) $[\![some_{weak}]\!]$ = a function of type <<e,t>t>, such that for any $f \in D_{<e,t>}$
$some_{weak}(f) = 1$ iff $\exists x\,[f(x) = 1]$

Assume now that the trace left by DR in (6)b is semantically vacuous. Given this proviso, the meaning rule in (7) can be directly employed in the semantic computation of (6)b.

Note that the portion of the object in SpecAgrOP that is left after DR in example (6)b ($[_{DP}$ *t movie]*) denotes a property. As we have already seen in the derivation of (3), abstraction over the object trace by the λ-binder also results in a property, and AgrO' is accordingly translated as $\lambda j[saw(j)(t_i)]$. Thus, the object in SpecAgrOP[7] and its sister node AgrO' can be intersected by Predicate Modification to yield the predicate $\lambda j[saw(j)(t_i)\ \&\ movie(j)]$ as the denotation of the lower AgrOP-node:

(8) $[_{AgrSP}$ Mary λi $[_{AgrOP1}$ $some_k$ $[_{AgrOP2}$ $[_{DP}$ t_k movie] $[_{Agr'}$ λj $[_{VP}$ t_i saw t_j]]]]]
$[\![[_{DP}$ t movie]$]\!]$ = λx[movie(x)]
$[\![$Agr'$]\!]$ = λj[saw(j)(t_i)])
$[\![[_{AgrOP2}$]$]\!]$ = λj[saw(j)(t_i)] λx[movie(x)] = (Predicate Modification)
= λj[saw(j)(t_i) & movie(j)]) =

Applying the lexical entry for the determiner in (7) to the AgrOP2 node results in an open formula (see (9)a), which is then combined with the subject in the final step of the computation, as shown under (9)b:[8]

(9) a. $[\![[_{AgrOP1}$]$]\!]$ = $[\![$some$]\!]$ λj[saw(j)(t_i) & movie(j)]) =
= $\exists$x[saw(x)(t_i) & movie(x)]
b. $[\![[_{AgrSP}$]$]\!]$ = λi[$\exists$x[saw(x)(i) & movie(x)]] (Mary) =
= $\exists$x[saw(x)(Mary) & movie(x)]

(9) represents now the desired output, which was derived compositionally from a transparent LF.

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translation of the weak reading of the NP.

[7] In Heim (1992), all arguments are interpreted VP-internally. The most important difference to the present conception is now that in Heim (1992), the head noun of a weak NP has to incorporate into the verb after DR, yielding the LF-output in (i):
(i) Mary [$some_i$ $[_{VP}$ $[_{V^0}$ $movie_j$ - see]$[_{NP}$ t_i t_j]]]
The resulting complex 'common noun plus verb' is then interpreted in terms of Generalized Predicate Modification. The assumption of this additional rule of composition becomes necessary because a transitive verb (type <e,<e,t>>) cannot be intersected with an incorporated noun (type <e,t>) by Predicate Modification. Thus, the current approach is more parsimonious, in that it derives the interpretation merely on the basis of Functional Application and Predicate Modification. Moreover, in the case of weak subjects, the present system does not have to resort to incorporation out of the subject, a strategy that is generally thought to be blocked (Baker 1988).

[8] Musan (1995), taking up a point made in Heim (1987) and von Stechow (1980), notes that translating weak NP's as cardinality predicates leads to inadequate truth conditions for NP's headed by non-monotone determiners.
(i) Mary saw exactly two movies
(ii) $\exists$x[|x|=2 & movie(x) & saw(x)(Mary)]
If (ii) were the semantic translation if (i), the sentence would infelicitously come out as true even in a scenario in which Mary saw more than two movies. See also Herburger (1997) for criticism of an account of weak readings in terms of existential operators.

3. Reinterpreting The Mapping Hypothesis

The analysis of weak NP's introduced in section 2 has interesting repercussions for the analysis of scrambling phenomena in German. Before this point can be established, it will be necessary to lay out some preliminary assumptions concerning the sentential architecture of German, though.

3.1. Background: German Phrase Structure

For reasons of concreteness, I will adopt the model for German clause structure suggested by Munaro (1991) and Brugger & Poletto (1993): Verbal arguments are base-generated within VP and invariantly move to their respective SpecAgrP positions in overt syntax. The main motivation for this specific view comes from the serialization of prototypically indefinite objects like the wh-indefinite *was*/'whichever', which precede (VP-adjoined) manner adverbials and negation, as shown by (10).[9]

(10) a. daß wer $[_{AgrOP}$ was$_i$ $[_{NegP}$ nicht $[_{VP}$ t_i gekauft hat]]]
that somebody something not bought has
"that somebody did not buy something"
b. *daß wer $[_{NegP}$ nicht $[_{VP}$ was gekauft hat]]
that somebody not something bought has

Scrambling is analyzed as adjunction to a maximal Agr-projection or TP. The two subject positions identified by Diesing (1990, 1992) and Kratzer (1989) are equated with SpecAgrSP and SpecTP, respectively. Hence, a ditransitive clause that obeys basic word order is assigned the structure below:

(11) $[_{AgrSP}$ {Subject}$_i$ $[_{TP}$ {Subject}$_i$ $[_{AgrIOP}$ IO$_j$ $[_{AgrOP}$ DO$_k$ $[_{NegP}$ $[_{VP}$ t_i $[t_j$ $[t_k$ verb]]]]]]]]

3.2. The Mapping Hypothesis, Scrambling and Weak NP's

Recall that the weak interpretation of an NP is contingent upon the application of DR to that NP at LF. DR is arguably subject to syntactic locality conditions and the ECP, much the same as other instance of subextraction.[10] Assume therefore - as a first approximation - that DR is restricted to determiners that head NP's in L-marked positions:

(12) Constraint on DR ('CDR')
Determiner Raising is possible only out of L-marked positions.

In German, L-marked positions are the respective base positions of the internal arguments - Spec of Agr-phrases - and the lower subject position SpecTP. This generalization is for instance

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[9] Note on the side that there is a potential problem with the assumption that all arguments obligatorily leave VP in overt syntax. Remnant Topicalization can pied-pipe a direct object embedded within the fronted VP while leaving behind sentential negation, as shown by (i)

(i) $[_{CP}$ $[_{VP}$ Das Buch gegeben$]_i$ hat $[_{AgrSP}$ er $[_{AgrIOP}$ der Maria $[_{NegP}$ nicht t_i]]]]
the book given has he the M. not
"He did not give the book to Mary"

[10] See e.g. den Besten (1981), Müller (1993: 74ff) and van Riemsdijk (1989).

governing the behavior of NP-Split phenomena. *Was-für*-Split and Split-Topicalization, which are generally taken to be indicative of a movement chain, are restricted to configurations in which the remnant resides in its base position, as witnesses by the deviance of the b-examples below (den Besten 1981, Frey 1989):

(13) a. Filme hat Maria [viele t] gesehen
movies has Mary many seen
"Mary saw many movies"
b. *Filme$_i$ hat [viele t$_i$]$_j$ Maria t$_j$ gesehen

(14) a. Was hat Maria [t für Filme] gesehen
what has Mary for movies seen
"What kind of movies did Mary see"
b. *Was$_i$ hat [t$_i$ für Filme]$_j$ Maria t$_j$ gesehen

Since scrambled NP's form opaque domains, the CDR under (12) leads us to expect that DR is not available for NP's that have undergone scrambling. This expectation is in effect borne out and empirically reflected by the set of data captured by Diesing's Mapping Hypothesis (Diesing 1990, 1992).

According to Diesing (1990, 1992) and Kratzer (1989), an NP that has crossed over the ∃-closure operator attached to VP in overt syntax loses its existentially bound, weak reading. A standard minimal pair illustrating this phenomenon, taken from Kratzer (1989), is given below:

(15) a. weil wir immer [∃-Closure [ein gutes Projekt] fördern] : Existential
since we always a good project sponsor
"since we always sponsor a good project"
b. weil wir **[ein gutes Projekt]$_i$** immer [∃-Closure [**t$_i$** fördern]] : Generic

Whereas (15)a may be given a weak, existential interpretation, the object NP in (15)b can exclusively be construed as strong.

The contrast under (15) receives an immediate explanation in the present system. DR may target the object in its base in (15)a, but it is blocked to apply in the case of (15)b, where the object resides in a non-L-marked scrambling position:

(15)a' weil wir immer [**ein$_i$** [$_{AgrOP}$ [**t$_i$** gutes Projekt] [$_{VP}$ fördern]]]]
(15)b'*weil wir [**ein$_i$** [$_{AgrOP}$ [**t$_i$** gutes Projekt] [$_{AgrOP}$ immer [$_{AgrOP}$ t$_{DO}$ [$_{VP}$fördern]]]]]

Thus, the unavailability of the weak construal for scrambled NP's can be reduced to the more general syntactic restrictions on subextraction (the 'CDR').[11]

The analysis presented so far has empirical and conceptual ramifications in two directions: First, it is claimed that weak readings are not sponsored by a syntactically projected ∃-closure operator at the VP-level, but that they are the result of a categorematic, restrictionless

[11] A problem is posed by the general opacity of datives for overt subextraction (vd. den Besten 1981, Müller 1993: 1975), which would lead us to expect that - counter to fact - datives cannot be construed as weak. I leave this problem for further research.

interpretation for weak determiners. Second, the account relies crucially on the fact that DR is restricted by the CDR under (12). In the following section, I will demonstrate that those two aspects of the analysis are manifest in various empirical domains.

4. Empirical Consequences

There are two empirical arguments that favor the present view over theories that employ a syntactically detectable ∃-closure operator attached to a specific syntactic projection. They will be presented in 4.1. and 4.2., respectively. In section 4.3, it will be argued that the DR-approach offers a unified account of subextraction and Mapping effects, two phenomena that have been treated as being merely coincidentally related to each other in Diesing (1990, 1992).

4.1. Cyclicity Effects

First, the analysis naturally accounts for the local nature of ∃-closure. Unlike pronominal variable binding, binding by ∃-closure is a strategy restricted to the minimal clause. An NP can be existentially bound only by an ∃-closure operator in the local sentential domain. The scrambled indefinite object *eine Sonate* in (16) can for instance only receive a strong reading, despite the fact that it is within the c-command domain and the scope of the ∃-closure operator in the superordinate clause:

(16) Peter hat einem Freund gesagt [$_{CP}$ daß dieser Pianist [eine Sonate]$_i$ immer t_i
P. has a friend said that this piano player a sonata always
auswendig kann]
by heart knows
"Peter has told a friend that this piano player always knows a sonata by heart"

In the present system, this observation follows directly from the fact that existential force is introduced by the determiner of a weak NP that has been targeted by DR, and not by an abstract operator. There is no way for the scrambled object in (16) to be interpreted as a weak indefinite, because the object is located in a non-L-marked position from which DR is blocked. It is on the other side not obvious how Diesing's original proposal could be extended to cover the locality constraint manifest in (16).[12]

4.2. Eliminating Multiple Existential Closure Operators

Second, there are structures indicating that ∃-closure theories need to stipulate more than a single existential operator in the syntactic tree. On the basis of examples like (17)b, Bobaljik (1995) points out that the object in a string 'particle - subject - object - manner adverbial' invariantly

[12] See Tsai (1994), who also recognizes this problem, for a solution in terms of cyclicity.

receives a strong interpretation, while the subject may still be construed as weak:

(17) a. weil ja doch Kinder$_{SU}$ sorgfältig Äpfel$_{DO}$ essen
since indeed children carefully apple eat
(SU and DO existential)

b. weil ja doch Kinder$_{SU}$ **Äpfel$_{DO}$** sorgfältig **t** essen
since indeed children apple carefully eat
(SU existential, DO generic)

He argues that in order to accommodate (17)b it is necessary to assume the presence of two distinct ∃-closure operators, one located in the vicinity of the particle *ja doch* and one adjacent to the manner adverbial, as shown by the LF-representation below:[13]

(17)b' [*ja* [∃-Closure [$_{TP}$ SU [$_{AgrOP}$ **DO$_i$** [$_{AgrOP}$ *sorgfältig* [∃-Closure [$_{AgrOP}$ **t$_i$** ...]]]]]]]

In (17)b', the subject falls within the local scope domain of the higher existential operator and can accordingly be construed as weak. The scrambled object on the other side resides outside the c-command domain of the lower ∃-closure, resulting in a strong, generic reading.

There is also evidence that seems to suggest the presence of a third site for ∃-closure, apart from the two positions identified by Bobaljik. In ditransitive constructions, scrambling of the indirect object over a manner adverbial as in (18)b results in a strong, specific reading for this object, while the subject and the direct object may still be read existentially:

(18) a. weil Autoren$_{SU}$ widerwillig Lekoren$_{IO}$ unfertige Manuskripte$_{DO}$ zeigen
since authors reluctantly editors unfinished manuscripts show
"since authors reluctantly show unfinished manuscripts to editors"
(SU, DO and IO existential)

b. weil Autoren$_{SU}$ **Lekoren$_{IO}$** widerwillig **t$_i$** unfertige Manuskripte$_{DO}$ zeigen
since authors editors reluctantly unfinished manuscripts show
(SU and DO existential, IO generic)

In an ∃-closure theory, the paradigm under (18) can be given an adequate treatment under the assumption that the syntactic tree contains a third ∃-closure operator, one that is aligned to the left edge of AgrIOP, as depicted below:

(18)b' [$_{AgrIOP}$ **IO$_i$** [$_{AgrIOP}$ *ungern* [∃-Closure [$_{AgrIOP}$ **t$_i$** [∃-Closure [$_{AgrOP}$ DO ...]]]]]]

So far, three distinct positions for ∃-closure have been identified in the tree, viz. the left edge of TP, AgrIOP and AgrOP, respectively. All three of these positions are indispensable in Diesing's original theory to account for the data in (17)b and (18)b. It seems however as if an explanation of the facts above in terms of multiple discrete ∃-closure operators fails to capture the correct empirical generalization: strong readings are not triggered by movement over a specific node in the tree, but rather by permutation of word-order by scrambling to any position in the phrase marker.

[13]The problem discussed in 4.1 resurfaces in this context. Since note that it remains mysterious why the higher ∃-closure operator may not bind the scrambled object.

The alternative approach advocated here capitalizes exactly on this observation. Only arguments located in their canonical L-marked SpecAgrP's and SpecTP can be targeted by DR, and weak readings are therefore not licensed in scrambled positions.

4.3. Unifying Mapping Effects and Restrictions on Subextraction

The simple and plausible assumption that DR is possible only out of L-marked NP's allows us to correlate two hitherto unrelated empirical domains that have both been central in Diesing (1990).

Diesing (1990) points out that only VP-internal NP's may be bound by ∃-closure and that only VP-internal NP's can be targeted by NP-Split. Recall that Split-Topicalization and *Was-für*-Split are attested only from what counted for Diesing as VP-internal locations, as witnessed by (13) and (14) (repeated from above):

(13) a. Filme$_i$ hat Maria [viele t_i] gesehen
movies has Mary many seen
"Mary saw many movies"
b. *Filme$_i$ hat [viele t_i]$_j$ Maria$_j$ gesehen

(14) a. Was$_i$ hat Maria [t_i für Filme] gesehen
what has Mary for movies seen
"What kind of movies did Mary see"
b. *Was$_i$ hat [t_i für Filme]$_j$ Maria t_j gesehen

Thus, the VP-boundary plays a crucial role in two different respects: First, it demarcates the domain of ∃-closure. Second, it marks the boundary between syntactically L-marked and non-L-marked positions. But the correlation between these two facts remained more or less coincidental in Diesing (1990), VP-internal positions simply happened to be both L-marked and within the scope of ∃-closure. The present account offers a single explanation for both observations. NP-Split as well as weak readings are derived by subextraction, and subextraction is in turn restricted to L-marked positions (i.e. SpecAgrOP and the lower subject position TP).

The analysis naturally also covers the connection between interpretation and transparency of Stage Level and Individual Level subjects noted by Diesing (1990). Subextraction is restricted to subjects of Stage Level predicates, which reside in the lower, L-marked subject position, as in (19)a:

(19) a. Karotten$_i$ sind [$_{TP}$ [viele t_i] im Kühlschrank]
carrots are many in the fridge
"Many carrots are in the fridge" (Diesing 1990: 63)
b. *Schuhe$_i$ sind [$_{AgrSP}$ [viele t_i] wasserdicht]
shoes are many waterproof
"Many shoes are waterproof"

Moreover, only subjects of Stage Level predicates can be construed as weak, as demonstrated by the contrast in (20):

(20) a. weil [$_{TP}$ ein Feuerwehrmann [verfügbar ist]] : Existential
since a fireman available is
b. weil [$_{AgrSP}$ ein Feuerwehrmann [altruistisch ist]] : Generic only
since a fireman altruistic is

Subjects of Individual Level predicates reside in the higher subject position SpecAgrSP, and SpecAgrSP is not L-marked. Hence, we correctly predict that not only NP-Split but also DR is blocked from applying to Individual Level subjects. Once again, the correlation between the availability of a weak interpretation and the possibility of subextraction follows immediately from the present conception.

4.4. RÉSUMÉ

Recapitulating briefly, we have seen that the DR-account fares better than ∃-closure theories w.r.t. three empirical domains. First, it does not have to resort to idiosyncratic locality restrictions on ∃-closure and second, it allows us to dispense with multiple ∃-closure operators in the tree. Finally, the DR-approach succeeds in reducing the constraints on the distribution of weak NP's and on subextraction to a single source.

5. RECONSTRUCTION AND DR

At this point, a potential problem for the analysis has to be addressed. The problem pertains to the level of application of DR: Since DR is assumed to apply in covert syntax, and since movement in overt syntax is - at least in some cases - known to be reversible by reconstruction at LF, it is at least conceivable that scrambling could be undone prior to DR.[14] Then, the scrambled object in a configuration like (15)b (repeated below as (21)a) would e.g. come to lie in an L-marked position at LF (vd. (21)b) and nothing would prevent DR from deriving the LF configuration for the (unattested) weak reading in (21)c:

(21) a. weil wir [[ein gutes Projekt]$_i$ immer [$_{AgrOP}$ t$_i$ fördern]]
since we a good project always sponsor
b. weil wir immer [$_{AgrOP}$ [ein gutes Projekt] fördern] : Reconstruction
c. weil wir immer [ein$_i$ [$_{AgrOP}$ [t$_i$ gutes Projekt] fördern]] : DR

Thus, reconstruction could in principle obviate the factors that set apart scrambled from non-scrambled NP's. It will however turn out that exactly those kind of movement processes that are subject to the Mapping Hypothesis do not reconstruct. The current section attempts to establish this important point and will eventually lead to an incorporation of a further set of data - to wit reconstruction phenomena - into the analysis.

For reasons of exposition, I will start out by considering an apparent piece of counter evidence for the claim that scrambling chains do not reconstruct. From there, it will be easier to develop the argumentation in a transparent way.

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[14] Note that the problem does not arise for the deviant instances of NP-Split discussed in 4.3, where subextraction out of a non-L-marked position already proceeds in overt syntax. Even though reconstruction could in principle put the remnant back into its L-marked base at LF, the trace left by overt subextraction could not be licensed so to speak 'retroactively' at LF.

5.1. LACK OF RECONSTRUCTION WITH SCRAMBLING

It has been widely observed in the literature (Webelhuth 1985, Frey 1989, Haider 1989) that scrambling in German allows for selective violations of WCO. A pronoun embedded within an object that has scrambled to the left of a quantificational subject can be bound by this subject, as shown by (22)b:

(22) a. *weil [$_{AgrSP}$ [seine$_i$ Mutter] [$_{AgrOP}$ jeden$_i$ liebt]]
since his mother everyone$_{DO}$ loves
"since his$_i$ mother loves everyone$_i$"

(22) b. weil [$_{AgrSP}$ [seine$_i$ Mutter]$_j$ [$_{AgrSP}$ jeder$_i$ [$_{AgrOP}$ t$_j$ liebt]]]
since his mother everyone$_{SU}$ loves
"since his$_i$ mother, everyone$_i$ loves"

An account in terms of the Copy Theory of Movement (Chomsky 1992) assigns to (22)b the LF input structure in (23):

(23) weil [$_{AgrSP}$ [seine Mutter] [$_{AgrSP}$ jeder$_i$ [$_{AgrOP}$ [seine$_i$ Mutter] liebt]]]

In (23), the subject binds the pronominal variable in the lower scrambling copy, while the higher copy undergoes deletion at LF. The deviance of (22)a furthermore indicates that reconstruction of subjects into their VP-internal base has to be blocked; otherwise, (22)a would be expected to behave on a par with (22)b. I will therefore assume more generally that reconstruction may not restore an NP into its VP-internal foot of the chain.

Interestingly, reconstruction is less readily available in double object constructions, as pointed out by Frey (1989) and Haider (1989). Local scrambling of a direct object over an indirect one as in (24)b bleeds the bound reading for pronouns embedded in the scrambled phrase:

(24) a. weil sie [$_{AgrIOP}$ jedem$_i$ [$_{AgrOP}$ sein$_i$ Geschenk überreichte]]
since she everyone his present gave
"since she gave everyone$_i$ his$_i$ present"
b. *weil sie [$_{AgrIOP}$ [sein$_i$ Geschenk]$_j$ [$_{AgrIOP}$ jedem$_i$ [$_{AgrDOP}$ t$_j$ überreichte]]]
since she his present everyone gave

Essentially the same restriction holds for the computation of connectivity effects with reflexives and reciprocals (vd. Frey 1989, Müller 1993 and references cited therein). A scrambled anaphor contained in a direct object that has crossed over an indirect object is outside the binding domain of the latter, as witnessed by the contrast in (25):

(25) a. weil ich den Gästen$_i$ [$_{AgrIOP}$ [zwei Freunde von einander$_i$] vorgestellt habe]
since I the guests two riends of each other introduced have
"since I introduced the guests$_i$ to two friends of each other$_i$"
b. *daß ich [zwei Freunde von einander]$_i$ den Gästen [$_{AgrIOP}$ t$_i$ vorgestellt habe]
since I two friends of each other the guests introduced have

We can conclude that locally scrambled direct objects may not undergo reconstruction into

SpecAgrOP.

Even more confounding is an additional complicating factor involved in German. Direct objects that have passed over both the indirect object and the subject by medium scrambling do in fact reconstruct. However, they are not restored all the way down into their base in SpecAgrOP, but seem to be evaluated in a position in between the subject and the highest internal argument.

Note first that a subject may bind a pronoun embedded in a fronted direct object to its left, as shown by (26)b, indicating the availability of reconstruction (vd. Frey 1989: 95f):

(26) a. weil jeder$_i$ dem Peter [$_{AgrOP}$ sein$_i$ Geschenk selber überreichen wollte]
since everyone the Peter his present by himself give wanted
"since everyone$_i$ wanted to give his$_i$ present to Peter by himself"
b. weil [$_{AgrSP}$ [sein$_i$ Geschenk]$_j$ [$_{AgrSP}$ jeder$_i$ dem Peter [$_{AgrDOP}$ t$_j$ selber
since his present everyone the Peter by himself
überreichen wollte]]
give wanted

A direct object that has undergone medium scrambling can however not be construed in the c-command domain of an indirect object, as manifest in the contrast between (27)a and (27)b:

(27) a. weil [$_{AgrSP}$ Peter [$_{AgrIOP}$ jedem [$_{AgrOP}$ sein$_i$ Geschenk selber überreichen wollte]]
since Peter everyone his present by himself give wanted
"since Peter wanted to give everone$_i$ his$_i$ present by himself"
b. *weil [$_{AgrSP}$ [sein$_i$ Geschenk]$_j$ [$_{AgrSP}$ Peter [$_{AgrIOP}$ jedem$_i$ [$_{AgrDOP}$ t$_j$ selber
since his present Peter everyone by himself
überreichen wollte]]]
give wanted

A comparison between (26)b and (27)b suggests now that the lowest copy in which the interpretive principles are checked resides somewhere in between the lower subject position and the highest object position. The data in this section can accordingly be given a uniform treatment under the assumption that scrambled objects undergo what one might call 'shallow reconstruction' in between TP and AgrIOP. The LF-output (28) depicts the situation after application of the Copy and Delete mechanism:

(28) [$_{AgrSP}$ Subject [$_{AgrIOP}$ [**Copy of IO/DO**] [$_{AgrIOP}$ ... [$_{AgrOP}$ ...

Summing up briefly, (28) accounts for the observation that a quantifier in subject position may bind a pronoun contained in an object copy, whereas an indirect object quantifier fails to obtain c-command over an AgrIOP-adjoined copy. The important point for present purposes is that scrambled NP's neither reconstruct into their Case positions nor back into VP. It follows then, that scrambled NP's are not located in an L-marked position at LF. Covert DR is therefore correctly predicted to be blocked from applying to scrambled NP's.

5.2. DR AND RECONSTRUCTION

So far, the restrictions on both subextraction in NP-Split constructions and Determiner Raising have been expressed in terms of L-marking. As it turns out, however, this generalization is not

entirely correct. While weak readings are also attested for NP's in SpecCP (vd. (29)), SpecCP is not L-marked and transparent for extraction, as shown by the ungrammaticality of example (30)b:

(29) Einen Film hat die Maria gesehen
a movie has the Mary seen
"Mary saw a movie"

(30) a. Hans meinte [$_{CP}$ [einen Film über Ceylon] habe Maria gesehen]
Hans meant a movie about Ceylon has Mary seen
"Hans said Mary saw a movie about Ceylon"
b. *Worüber$_i$ meinte Hans [$_{CP}$ [einen Film t_i] [habe Maria gesehen]
what about meant Hans a movie has Mary seen

It seems that the conditions on DR are looser than the ones which govern the opacity of an NP.[15] This observation is also reflected in another domain, namely reconstruction effects with wh-expressions.

In Chomsky (1992), reconstruction of wh-phrases is formally expressed in terms of the Copy Theory of movement and covert DR. Consider for instance example (31), in which an anaphor embedded within a fronted object is bound by the subject of the subordinate clause:

(31) John wonders [[which picture of herself$_i$]$_j$ Mary$_i$ likes best t_j]

The reconstructed construal of (31) is derived by first applying DR to both copies in the lower and higher chain link (vd. (32)b) with subsequent deletion of the higher restriction and the lower determiner as in (32)c:

(32) a. John wonders [which picture of herself] Mary likes
best [which picture of herself]
b. John wonders [which$_i$ [t_i picture of herself]] Mary likes
best [which$_i$ [t_i picture of herself]]
c. John wonders [which$_i$] Mary likes best [t_i picture of herself]]

Notice now that the higher copy of the wh-chain in (32)b resides in SpecCP. If one adopts Chomsky's approach towards reconstruction, DR out of SpecCP has therefore to be considered as a licit option.

Two conclusions can be drawn from the discussion above. First, the restrictions on

[15]This point is supported by an additional differences between the conditions on extraction and subextraction. Müller (1993: 75f) points out that while extraction is dependent upon the lexical choice of the main verb (vd. (i)), subextraction is not subject to such a restriction (vd. (ii)).

(i) a. [Über wen] hat er [ein Buch t]gelesen
about whon has he a book read
b. *[Über wen] hat er [ein Buch t] gestohlen
about whon has he a book stolen

(ii) a. Was hat er [t für ein Buch] gelesen
what has he for a book read
b. Was hat er [t für ein Buch] gestohlen
what has he for a book stolen

extraction on the one hand and subextraction (by DR) on the other hand are not the same. This issue falls outside the sope of the present paper and should therefore no longer concern us here. Second, it becomes now possible to see the common properties of the account of weak readings suggested here and the theory of reconstruction in Chomsky (1992). Since note that both processes rely on the strategy of covert DR. Thus, the lack of (radical) reconstruction in scrambling chains and the lack of weak readings for scrambled NP's can now be reduced to a common source, namely the unavailability of DR out of scrambling positions.[16] SpecAgrOP, SpecTP and SpecCP on the other hand license DR, and it comes therefore as no surprise that we find reconstruction[17] and weak readings in exactly these locations.

5.3. SPECULATIONS ON NP-SPLIT AND DR

The final open issue that I would like to address concerns the nature of the relation between NP-Split, weak readings and reconstruction. Recall that subextraction was initially taken to be restricted to L-marked positions. As for covert X°-subextraction by DR, this claim turned out to be too strong, because SpecCP was shown to be opaque for extraction but transparent for DR. In what follows, it will be argued that NP-Split should also be viewed as an instance X°-subextraction, instead of XP-subextraction. This conception allows us to subsume the derivation of NP-Split, weak readings and the reconstructed construal of an NP under a restricted theory, that only needs to refer to the conditions on DR. Thus, the trichotomy of principles governing the availability of extraction (as in (30)b), covert X°-subextraction (by DR) and overt XP-subextraction (by NP-Split) can be reduced to a dichotomy of principles: One set of principles which is responsible for the specific properties of extraction (where extraction means 'XP-extraction'), and one set of constraints which restricts the contexts in which subextraction is licit (where subextraction refers now exclusively to 'extraction of a head').

Consider to this end once again example (13), repeated below:

(13) Filme$_i$ hat sie [viele t_i] gesehen
movies has she many seen

Assume now that (13) is not so much an instance of XP-subextraction, but rather a manifestation of overt DR with 'reverse' application of the Copy and Delete mechanism along the lines of (33):

[16]There is still an open problem to be solved: NP's that have been scrambled to the left of the subject resist a weak reading, but undergo what has been called 'shallow reconstruction'. The present analysis, which relates both the availability of weak readings and reconstruction to DR fails to capture this observation. Tentatively, one might argue that shallow reconstruction is not dependent on DR, but derived by total deletion of the higher copy of the movement chain. (NB: This hypothesis is however substantially weakened by the remarks in footnote 17).

[17]There is an additional mysterious factor that I will leave for further research: NP's in SpecCP undergo only shallow reconstruction, they behave on a par with NP's in medium scrambling positions. The present theory does not explain why they may not reconstruct into their base. The problem is that - descriptively speaking - SpecCP on the one hand behaves like base positions - in licensing weak readings - and on the other hand shares characteristics with medium scrambling positions in allowing only for shallow reconstruction.

(33) a. hat [sie [$_{AgrOP}$ [$_{DP}$ viele [$_{NP}$ Filme]] gesehen]]]
b. [$_{CP}$ [$_{DP}$ viele [$_{NP}$ Filme]] hat [sie [$_{AgrOP}$ [$_{DP}$ viele [$_{NP}$ Filme]] gesehen]]]
c. [$_{CP}$ [viele [$_{DP}$ t [$_{NP}$ Filme]] hat [sie [$_{AgrOP}$ [viele [$_{DP}$ t [$_{NP}$ Filme]] gesehen]]]]
d. [$_{CP}$ [$_{DP}$ t [$_{NP}$ Filme]] hat [sie [$_{AgrOP}$ [viele gesehen]]]]

First, a copy of the object moves to SpecCP, as shown by (33)b. Then, in (33)c, DR separates the restriction from the determiner. PF-deletion applies, eliding the higher determiner and the lower restriction - instead of the lower determiner and the higher restriction, as in the cases of reconstruction - resulting in the surface string under (33)d.[18]

The alternative account for (13) outlined above capitalizes on the similarities between NP-Split and reconstruction. Since note that the Spell-Out string resulting from Split-Topicalization can be interpreted as the mirror image of the LF-output of reconstruction. This insight is more transparently depicted by the shaded portions in the table in (34), which represents the shape of the movement chain at Spell-Out and LF, respectively:

(34) **CORRELATION SPLIT-TOPICALIZATION AND RECONSTRUCTION**

	Spell-Out	LF
Split Topicalization	**NP ..... D**	D .....NP
Reconstruction	DP ..... DP	**D ..... NP**

Adopting this modified analysis, Split-Topicalization and reconstruction phenomena are derived by two common underlying mechanisms, namely DR and the Copy and Delete algorithm. The account is now able to explain in a simple and principled way why exactly those positions that license weak readings (base positions and SpecCP) are also the ones which are involved in NP-Split.

Empirical support for the tight correlation between the principles governing NP-Split and DR can finally be drawn from the observation that Split-Topicalization is restricted to weak NP's (vd. Hinrichs, Meurers, Nakazawa 1994):

(35) a. Filme hat Maria [viele/einen t] gesehen
"Mary saw many/one movies"
b. *Film(e) hat Maria [den/jeden/die meistent] gesehen
movie(s) has Mary the/every /most seen

It was established in section 2 that only weak determiners possess a 'restrictionless' lexical semantic entry of type <<e,t>,t>. It follows that only NP's headed by a weak determiner may be targeted by DR. Application of DR to a strong NP as in (35)b results on the other side in an uninterpretable LF-output and is therefore blocked. Thus, the DR-account for Split-Topicalization also leads to a better understanding of this specific restriction on NP-Split.

[18] Some speakers accept examples like (i); (i) poses a problem inasmuch as only parts of the lower restriction (i.e. *Filme* instead of *langweilige Filme*) have undergone deletion:
(i) Filme hat sie zwei langweilige gesehen
movies has she two boring seen

6. Conclusion

In the present paper, a novel approach towards the representation of weak readings was advocated, which proved to be empirically more adequate than ∃-closure theories. It was argued that one of the main ingredients of this new account - DR - can also be employed in the analysis of two at first sight unrelated phenomena: reconstruction and NP-Split. The restrictions on DR were shown to simultaneously govern the distribution of weak NP's, NP-Split and (to a certain extent) the availability of reconstruction in movement chains in German. Even though several open questions remain (e.g. how to account for 'shallow' reconstruction and the behavior of NP's in SpecCP), the present account is hopefully successful in providing a basis for further insights into the nature of the relation between the location of an NP in the tree and its syntactic and semantic properties.

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