

Resumptive Pronouns and Matching Effects in Zurich German Relative Clauses as Distributed Deletion*

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Zurich German (ZG) relative clauses are remarkable from a Germanic point of view in that grammatical relations are identified by means of resumptive pronouns instead of relative pronouns. Reconstruction effects and Strong Crossover violations show that movement is involved in the derivation of ZG relative clauses. Matching effects sensitive to case and preposition provide crucial evidence that the distribution of resumptives is determined by general licensing conditions on oblique case and prepositions. The matching/non-matching dichotomy is modeled as an instance of Distributed Deletion, which is claimed to be independently available in the language. Matching is furthermore sensitive to the actual surface form and thus favors a late insertion approach to morphology.

1. Introduction

This paper investigates the grammar of resumptive pronouns in Zurich German (ZG)¹ relative clauses. In section 2, I will lay out the general properties of ZG relative clauses, including the distribution of resumptives. In section 3, I discuss data that argue in favor of a movement analysis of resumptives. Section 4 presents hitherto undiscovered matching effects. In section 5 I discuss the interpretation of resumptives. Section 6 reviews previous approaches to resumption and one explicit account of the ZG data. In section 7 I present a new account, and section 8 contains detailed derivations. Section 9 summarizes the paper.

2. General properties of Zurich German relative clauses

2.1. General form

Restrictive Relative Clauses² in ZG are introduced by an invariant complementizer *wo* (*won* before vowels). Relative pronouns are absent, except for adverbial relations like ‘why’, ‘how’, ‘where’, which I will not discuss here. Instead, for certain grammatical relations there are

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¹ Zurich German is the dialect spoken in most parts of the canton (state) of Zurich in Switzerland. There are approximately one million native speakers.

² I will not discuss appositive relative clauses in this paper.

resumptive pronouns, formally identical to the unstressed version of the personal pronoun. They appear in the regular argument position or higher up in the left periphery, either in the so-called Wackernagel position between the subject and the middle field or cliticized onto C.

2.2. Distribution of resumptive pronouns

In local relativization,³ resumptive pronouns are found from the dative object⁴ on downwards on the hierarchy introduced by Comrie/Keenan (1977), including possessors, cf. Weber (1964), van Riemsdijk (1989: 343, 345; 2004):⁵

- (1) a) d Frau, wo **(*si)** immer z spaat chunt⁶ (subject)
 the woman C (she) always too late comes
 ‘the woman who is always late’
- b) es Bild, wo niemert **(*s)** cha zale (direct object)
 a picture C nobody (it) can pay
 ‘a picture that nobody can afford’
- c) de Bueb, wo mer ***(em)** es Velo versproche händ (indirect object)
 the boy C we (he.DAT) a bike promised have.1P
 ‘the boy we promised a bike’
- d) d Frau, won i von ***(ere)** es Buech übercho ha (P-object)
 the woman C I from (she.DAT) a book got have.1S
 ‘the woman from whom I got a book’
- e) Das deet isch de Typ, won i geschter ***(sini)** Fründin verführt han.
 that there is the guy C I yesterday (his) girlfriend seduced have.1S
 ‘That’s the guy whose girlfriend I seduced yesterday.’ (possessor)⁷

3. Movement

In much of the literature in the 80ies and 90ies, it is tacitly assumed that the presence of resumptive pronouns automatically implies a non-movement relationship between antecedent and pronoun. Work by Demirdache (1991), Aoun et al. (2001), and Boeckx (2003), however,

³ For reasons of space, I cannot go into long-distance relativization, where resumptives appear in all positions. See Salzmann (in prep.) or van Riemsdijk (2004) for the data and possible analyses. However, where the special properties do not interfere, I will use a few examples to complete certain arguments.

⁴ This does not hold for all Swiss dialects, and things generally seem to be more complex when it comes to datives. In ZG, resumptives are systematically found for animate indirect objects of transitive and ditransitive verbs (even though some speakers have started dropping the resumptive in recent years). With inanimate indirect objects of ditransitive verbs and unaccusative verbs with dative > nominative order, resumptives are awkward, often leading to ungrammaticality. Puzzlingly, many of those cases do not improve if the resumptive is omitted. See Salzmann (in prep.) for full discussion.

⁵ Unless otherwise noted the judgments represent those of my informants, mentioned in the acknowledgments.

⁶ The following abbreviations and symbols are used in this text: C = relative complementizer; S = singular; P = plural; NOM = nominative; ACC = accusative; DAT = dative; -OBLIQUE = -oblique case form, not specified for either nominative or accusative; Ø_D = empty determiner; PRP = dummy preposition;

⁷ Alternatively, possessors can also be rendered as complements of the preposition *von* ‘of’. These forms are constructed like PPs.

has shown that at least in some languages resumption is not incompatible with movement. I will argue in this section that movement is indeed involved in the derivation of ZG relative clauses. It is, however, not trivial to diagnose the presence/absence of movement when resumptive pronouns are employed because resumptives usually void locality violations. Therefore, further diagnostics are needed. I will therefore additionally discuss in some detail reconstruction and Crossover effects.

3.1. Locality

The question of movement is particularly difficult in the domain of locality because resumptive pronouns normally void island violations. In English, resumptives only occur in contexts where movement is not available. Inserting a resumptive rescues the construction:^{8,9}

(2) This is the man that I don't know < why nobody likes * /**him** >.

Since English does not use resumptives in non-island contexts,¹⁰ their presence is direct evidence that the movement operations in question are sensitive to locality. Zurich German also has resumptives within islands:

(3) a) D Anna isch die einzig Frau, won i mi froi, < wänn i ***(ire)** begägne >.
 the Anna is the only woman C I am.happy when I (she.DAT) meet.1S
 'Anna is the only woman that I am happy when I meet her.' (adjunct island)

b) de Maa, won i < mit de Schwöschter von ***(em)** > i d Schuel bin
 the man C I with the sister of him in the school am
 'the man with whose sister I went to school' (PP island)

In (3)a, the resumptive is located in an adjunct island, in (3)b it is embedded in a PP within another PP. Both configurations do not allow regular A'-extraction:¹¹

(4) a)***Wem** froisch di < wänn d begänisch>?
 who.dat are.happy when you meet.2S
 lit.: 'Who are you happy when you meet?'

b)***Vo wem** bisch < mit de Schwöschter > i d Schuel?
 of who.DAT are with the sister in the school
 lit.: 'Who did you go with the sister of to school?'

This suggests that movement is absent. However, since resumptives also appear in positions where movement is available, e.g. in the matrix dative object position as in (1)c, the presence of a resumptive is not indicative of a locality violation and thus neither argues in favor nor against movement. Independent evidence is necessary to determine whether there is movement. The next two sections provide such evidence.

⁸ A term frequently employed for this use is 'intrusive pronoun', cf. Chao/Sells (1983).

⁹ Where relevant islands appear enclosed in angled brackets.

¹⁰ This does not hold for all varieties of English according to Prince (1990).

¹¹ The examples do not improve if resumptive pronouns are used, cf. Salzmann (in prep.).

3.2. Reconstruction

Reconstruction effects are usually taken to show that a particular constituent has occupied a lower position at some point in the derivation. They are therefore a useful diagnostics for movement in resumptive structures. Crucially, we do find robust reconstruction effects in ZG even in the presence of resumptives. This represents clear evidence for movement. The following examples illustrate reconstruction for anaphor binding (5), bound pronouns (6), and idioms (7). Whether there is a gap or a resumptive, reconstruction always takes place:¹²

(5) a) S Bild vo **sich_i**, wo de **Peter_i** ___ wett verchaffe, gfallt niemertem.¹³
 the picture of self C the Peter ___ wants sell pleases nobody
 ‘Nobody likes the picture of himself_i that Peter_i wants to sell.’

b) s Grücht über **sich_i**, wo sich de **Peter_i** drüber uufregt ...¹⁴
 the gossip about self C self the Peter about.it gets.worked.up
 ‘the gossip about himself_i that Peter_i is getting worked up about’

(6) a) S Bild vo **sine_i** Eltere, wo **jede Schüeler_i** ___ mitbracht hät,
 the picture of his parents C every pupil ___ brought.with has
 hanget a de Wand.
 hangs on the wall

‘The picture of his_i parents that every pupil_i brought with him is hanging on the wall.’

b) D Periode vo **sim_i** Läbe, wo **niemert_i** gärn drüber red, isch d Pubertät.
 the period of his life C nobody likes.to about.it talks is the puberty
 ‘The period of his_i life that nobody_i likes to talk about is puberty.’

(7) a) De **Sträich**, wo mer em Lehrer ___ **gsplt** händ, isch echli krass gsii.
 the trick C we the.DAT teacher played have.1P is a.bit extreme been
 ‘The trick we played on the teacher was somewhat extreme.’

b) S **Fettnäpfli**, won i **drii** trampet bin, isch eigetli nöd z überseh gsii.
 the faux.pas C I in.it stepped am is actually not to overlook been
 ‘The faux pas I made could in fact not be overlooked.’¹⁵

There is also reconstruction for scope. The following pairs illustrate reconstruction for distributive readings and amount readings (Sauerland 1998: 68):

¹² I will not discuss reconstruction for Principle C because the complexity of the issue is beyond the scope of this paper. I will also not discuss the interpretation of superlative adjectives first discussed in Bhatt (2002) because it requires long-distance relativization, which is not discussed here. Salzmann (in prep.) provides detailed discussion of both, which will lead to a partial reassessment of the analysis.

¹³ The invariant anaphor *sich* does not allow for logophoric use. The objections discussed in (Bhatt 2002: 50) therefore do not apply. Furthermore, in both examples, binding cannot be due to an implicit external PRO-argument inside the external head which is sometimes taken to show that reconstruction is not necessary: a noun such as mirror image cannot take an external argument and with ‘rumor’ if there is an implicit PRO at all it is disjunct from Peter because he is unlikely to have spread offensive gossip about himself.

¹⁴ If the a neuter resumptive pronoun is governed by a preposition it is realized as an R-pronoun, the whole complex as a pronominal adverb.

¹⁵ The idiom *in es Fettnäpfli trampe* (lit.: to step into a fat bowl) means ‘to put one’s foot in one’s mouth’.

- (8) a) d **Band** wo **jede Student** am beschte fint
 the band C every student the best finds
 ‘the band every student likes best’ $\exists > \forall; \forall > \exists$
- b) s **Foti** wo **jede Schüeler** demit i d Schuel cho isch
 the picture C every student with.it in the school come is
 ‘the picture every pupil came to school with’ $\exists > \forall; \forall > \exists$
- (9) a) Kän Linguischt würd di **vile Buecher** läse,
 no linguist would the many books read
 wo de Hans fürs Medizinstudium **bruucht**. many > need; need > many
 C the John for.the med.school needs
 ‘No linguist would read the many books that John needs for med school.’
- b) Kän Linguischt würd di **vile Buecher** läse, many > need; need > many
 no linguist would the many books read
 wo sich de Hans demit **sött** uf d Prüefig vorbereite.
 C self the John with.it should on the exam prepare
 ‘No linguist would read the many books that John should prepare with for the exam.’

Distributive readings obtain when the external head of the relative is interpreted in the scope of the universal quantifier, i.e. when there is a different favorite band/picture for every student/pupil; amount readings result when the amount quantifier is interpreted in the scope of the modal: linguists would not read the books because of their sheer number; under the referential/wide-scope reading, there would be a specific set of books that no linguist would want to read.

Reconstruction is then a strong argument in favor of movement in ZG restrictive relatives. Importantly, reconstruction effects also obtain in the presence of a resumptive pronoun.¹⁶

3.3. Strong Crossover¹⁷

With relatives that leave gaps, Strong Crossover (SCO) effects are easy to test and obtain straightforwardly in ZG:

- (10) *de **Maa_i**, won **er_i** ___ _i gärn hät
 the man C he likes
 lit.: ‘the man_i who_i he_i likes’

There is A'-movement across a coreferential pronoun, which leads to a straightforward violation. Once relatives involve resumptive pronouns, SCO test effects need to be constructed with some care, as discussed in McCloskey (1990: 211f.). Especially, it is important that the pronoun that is crossed cannot be interpreted as the resumptive (i.e. the variable) and the putative resumptive as a coreferential pronoun as in the following example:

¹⁶ An important question is whether there is reconstruction if the resumptive is located inside an island. In Salzmann (in prep.) I show that there are indeed reconstruction effects and conclude from this that there is movement out of the island.

¹⁷ I am very grateful to Rajesh Bhatt for insightful discussion of these issues.

- (11) de **Maa_i**, won **em_i** gsäit han, dass **er_i** en Tubbel isch
 the man C he.DAT told have.1S that he an idiot is
 ‘the man_i who_i I told he_i was an idiot’

If there were movement from the embedded clause across the matrix dative object, the sentence should be ungrammatical. However, an alternative parse is possible, and this seems to be the one that is crosslinguistically always preferred: the first resumptive is interpreted as the real variable whereas the second pronoun is just interpreted as coindexed with the first one, as in the English translation. Therefore, one has to construct examples where the first pronoun cannot be interpreted as resumptive. This is the case when the pronoun is a subject or direct object, because resumptives are not found with those relations, cf. (1). And indeed, these sentences are strongly ungrammatical and therefore show a SCO violation:

- (12) a)*De **Bueb_i**, won **er_i** tänkt, dass d Marie **en_i** gärn hät.
 the boy C he thinks that the Mary him likes
 lit.: ‘The boy_i who_i he_i thinks that Mary likes t_i.’
 b)*de **Maa_i**, won **en_i** devoo überzügt han, dass **er_i** tumm isch
 the man C him there.of convinced have.1s that he stupid is
 lit.: ‘the man_i who_i I convinced him_i is stupid’

In both examples, the real resumptive is located in the embedded clause. Constructing SCO violations in the matrix clause only is somewhat difficult because many of the structures will be ruled out independently by Principle B as the following example:

- (13) *de **Maa_i**, won **er_i** **em_i** es Buech ggää hät
 the man C he he.DAT a book given has
 lit.: ‘the man_i who_i he_i gave a book’

This can be avoided if either the pronoun is more deeply embedded or is a possessive which does not trigger a Condition B effect. Once this is taken care of we get a straightforward SCO violation:¹⁸

- (14) a)*de **Bueb_i**, won **er_i** mit eme Fründ vo **im_i** es Auto gschtole hät
 the boy C he with a friend of him a car stolen has
 lit.: ‘the boy_i who_i he_i stole a car with a friend of’
 b)*de **Bueb_i**, won **er_i** **sini_i** Mueter gärn hät
 the boy C he his mother likes
 ‘the boy_i whose_i mother he_i likes.’

I conclude that SCO effects provide straightforward evidence in favor of movement in resumptive relatives in ZG.¹⁹

¹⁸ For the SCO violation to obtain, there has to be movement of a coreferential element across the matrix subject; this obtains either if the pronoun inside the relative clause is pied-piped with the head noun ‘woman’ or if there is actually movement out of the relative clause or out of the DP in the possessor case. In Salzmann (in prep.) I argue for the second option, which is in line with the fact that there is also reconstruction into islands, cf. footnote 16. Since I will adopt a head raising analysis in 7.2, it will not be the pronoun that causes an SCO violation but rather a copy of the external head.

¹⁹ I do not discuss Weak Crossover (WCO) Effects because a) they are generally much weaker in relative clauses (Rouveret 2002) and b) they are not found in local A’-movement in German, cf. Grewendorf (2002). See Shlonsky (1992: 460ff.) for additional complications with WCO in resumptive relatives and Salzmann (in prep.) for detailed discussion of the ZG facts that also takes long-distance relativization into account.

4. Matching effects

In this section, I will describe a property of Zurich German (and more generally Swiss German) relative clauses that so far has gone unnoticed, namely matching effects, governed by the following generalization:

(15) The Zurich German Relative Clause Matching Generalization

resumptives and prepositions within the relative clause are deleted if the head noun

- i) bears the same case
- ii) is selected by the same preposition

4.1. The Basis of matching: identity in case/preposition

4.1.1. Prepositional relations and dative

Consider the following examples:

- (16) a) Ich han **em** **Bueb**, [wo t (***em**) es Buech versproche häsch],
 I have.1S the.DAT boy C you (he.DAT) a book promised have.2S
 es schöns Exemplar ggää.
 a beautiful copy given

‘I gave the boy who you promised a book a beautiful copy.’

- b) Ich ha **vo de** **Frau**, [won i scho geschter (***von ere**)
 I have.1S from the.DAT woman C I already yesterday (from she.DAT)
 es Buech übercho han], wider eis übercho.
 a book received have.1S again one received

‘I received from the woman from whom I had already received a book yesterday another one.’

In these examples the resumptive and (where applicable) the preposition inside the relative clause have²⁰ to be deleted because the head-noun receives the same marking in the external context.

4.1.2. Subjects and objects

Subjects and direct objects are systematically exempt from the matching requirement. In the following examples, there is a nominative/accusative mismatch, but in both cases, no resumptive is possible:

²⁰ This probably overstates the case. For many speakers, deleting the resumptive is merely a (preferred option). For reasons of clarity, I will nevertheless continue to mark matching as obligatory.

- (17) a) **D Frau**, [wo (*si) mi geschter küst hät], han i gar nöd kânt.
 the.ACC woman C she.NOM me yesterday kissed has have.1s I not.even known
 ‘I did not even know the woman who kissed me yesterday.’
- b) **D Frau**, [wo d (*si) iiglade häsch], isch nett.
 the.NOM woman C you her.ACC invited have.2s is nice
 ‘The woman who you invited is nice.’

At first sight, one might argue that these examples do in fact instantiate matching because the case form used for subjects and direct objects is identical in ZG (except for pronouns) and the case borne by the external element is that very case as well. However, this would incorrectly predict the occurrence of resumptives for subjects and directs if the head noun is assigned dative case or governed by a preposition. But in such configurations, resumptives are systematically absent as well:

- (18) a) **De Frau**, [wo (*si) geschter cho isch], schuld i no Gält.
 the.DAT woman C (she.NOM) yesterday come is owe.1s I still money
 ‘I still owe the woman who came yesterday money.’
- b) **Vo de Frau**, [won i (*si) letschts Jahr in Kreta troffe han],
 from the.DAT woman C I (she.ACC) last year on Crete met have.1s
 han i nie mee öppis ghöört.
 have.1s I never anymore something heard
 ‘I’ve never heard again from the woman I met last year on Crete.’

4.2. The precise conditions for matching

In this section, I discuss the precise conditions for matching. I will look at constructions that minimally violate the generalization in (15), i.e. examples that do not share the same preposition but the same case or vice versa. Then I will further investigate whether thematic relations play a role. Lastly, I will investigate to what extent different notions of case – like structural vs. inherent; abstract vs. morphological – play a role.

4.2.1. Mismatches in preposition, case, and case-assignment 1: only 1 PP

I will first discuss mismatches where only one clause contains both a P and a DP whereas the other one only contains a DP. I will only discuss cases where there is case-matching. In examples where there is no case matching, there are (of course) always resumptives. The first case combines an external P assigning dative case with relativization of the dative object within the relative clause:

- (19) Ich ha **vom Maa**, [won i (*em) es Buech ggää han],
 I have.1s from.the.DAT man C I (he.DAT) a book given have.1s
 geschter mis Gält übercho.
 yesterday my money got
 ‘Yesterday I got my money from the man to whom I had given a book.’

Evidently, dative case on the external head licenses matching. In the reverse case with an external dative and a P + dative internally both the preposition and the resumptive are required in the relative clause:

- (20) Ich han **em** **Maa**, [won i ***(von em)** es Buech übercho han],
 I have.1S the.DAT Man C I (from he.DAT) a book received have.1S
 zwänzg Stutz ggää.
 twenty bucks given

‘I gave the man from whom I had received a book twenty bucks.’

4.2.2. Mismatches in preposition, case, and case-assignment 2: 2 PPs

The next class of mismatches involves PPs in both cases. In the first example, there is neither matching in case nor preposition. It is little surprising that both the resumptive and the preposition are required:

- (21) Ich ha **für d** **Lüüt**, [won i ***(mit ene)** i d Schuel bin],
 I have.1S for the.ACC people C I (with they.DAT) in the school am
 ganz vil Schoggi kchauft.
 very much chocolate bought

‘I bought a lot of chocolate for the people with whom I went to school.’

In the next example, there is case-matching, but the prepositions are different. Again, both the resumptive and the preposition are required in the relative clause:

- (22) Ich ha **vo de** **Lüüt**, [won i ***(mit ene)** i d Schuel bin],
 I have.1S from the.DAT people C I (with they.DAT) in the school am
 scho lang nüüt me ghöört.
 already long nothing anymore heard

‘I have not heard for a long time from the people with whom I went to school.’

A further logical possibility involves prepositions that can assign different cases. If one combines the two different uses of one preposition, both the resumptive and the preposition are required as shown in the following example that combines the local (dative) and the directional (accusative) use of the preposition *in* (‘in’, ‘into’)

- (23) Ich han **i de** **Wonig**, [won i morn ***(i si)** iizieh],
 I have.1S in the.DAT apartment C I tomorrow into her.ACC move
 vil repariert.
 much repaired

‘I have fixed a lot in the apartment into which I will move tomorrow.’

4.2.3. Mismatches in thematic relation

The previous examples suggest that the matching effects are form- and case-based. The following examples are used to test whether thematic roles also play a role:

- (24) Ich ha vom Maa, [won i (***von em**) gschlage worde bin],
 I have.1S from.the.DAT man C I (from he.DAT) hit was am
 nüüt me ghöört.
 nothing anymore heard

‘I haven’t heard anything from the man by whom I was beaten.’

In this example, which combines a source and an agent relation, dropping both the resumptive and the preposition is obligatory. The same holds for the next example, which combines comitative with instrumental:

- (25) De Hans hät sini Fründin mit de Frau, [won i hüt Abig
 the John has his girlfriend with the.DAT woman C I today evening
 (***mit ere**) is Kino gang], scho hüüfig betroge.
 (with she.DAT) into movie go.1S already often cheated.on

‘Hans has often cheated on his girlfriend with the woman that I will go to the movies with tonight.’

I conclude from this that the matching effect is not sensitive to thematic relations.²¹

4.2.4. Different kinds of datives

The previous sections suggest very strongly that the matching effects are based on formal identity. The next step is to test whether all datives pattern the same. It has been suggested for German and German dialects that datives should be divided into structural and inherent datives, cf. Gallmann (1992), Wegener (1985, 1991) etc.²² Structural datives are (among others) those of ditransitive verbs whereas inherent ones are those of monotransitive verbs. Since subjects and direct objects do not show matching effects one might expect structural datives to pattern the same. However, all datives require resumptives as shown by the following pair:²³

- (26) a) de Maa, wo t ***(em)** geschter ghulffe häsch
 the.NOM man C you (he.DAT) yesterday helped have.2S
 ‘The man who you helped yesterday’ (inherent)
- b) de Bueb, wo t ***(em)** geschter e Gschicht verzelt häsch
 the.NOM boy C you (he.DAT) yesterday a story told have.2S
 ‘The boy who you told a story yesterday’ (structural)

(26)a is usually considered inherent while (26)b would be categorized as structural. Since both types require resumptives, one would therefore expect that all datives pattern the same w.r.t. matching. This is borne out:

²¹ Even though this generalization is robust, there are cases where resumptives are strongly preferred to facilitate parsing. Cf. Salzmann (in prep.) for data and discussion.

²² I will come back to the diverging views on the nature of the dative in 7.1.1.

²³ As discussed in footnote 4, resumptives are strongly degraded with inanimate indirect objects of ditransitives and all indirect objects of unaccusatives; I will therefore not test these cases here. As a consequence, there is only one case we can still test, namely matching the animate indirect object of a transitive verb (inherent) with an animate indirect object of a ditransitive verb (structural).

- (27) Ich han **em** **Maa**, [wo t **(*em)** ghulffe häsch],
 I have.1S the.DAT man C you (he.DAT) helped have.2S
 geschter vo dir verzelt.
 yesterday of you told
 ‘I told the man about you yesterday that you helped.’

The external verb *verzele* ‘tell’ takes a structural dative whereas the verb inside the relative clause *hülffe* ‘help’ assigns inherent dative. Importantly, these data also show that datives do form a coherent group in the grammar of ZG relativization, which has implications for their general treatment.

4.2.5. The importance of the surface form: different abstract Case but same form²⁴

It is a well-known fact that it is often the exact morphological form rather than the abstract case that plays a role in matching phenomena such as those found in free relatives, cf. Groos/van Riemsdijk (1981). It seems that a similar fact holds for ZG: Case is never formally marked on ZG nouns, but only on determiners and adjectives. Bare indefinite plurals without adjectives are therefore identical in all three cases. If matching is purely form-based, it can be predicted that a matching constellation always obtains with such DPs, regardless of the exact grammatical relation/abstract case of the head noun. This prediction is borne out, as the following example shows:

- (28) øD *Mane*, [won i **(*ene)** es Buech gib], müend intellektuell sii.
 D men(NOM) C I (they.DAT) a book give.1S must.p intellectual be
 ‘Men to whom I give a book must be intellectual.’

The head noun is the subject of the main clause and thus assigned abstract nominative case. Inside the relative clause it functions as a dative object. The form *Mane* is underspecified morphologically, it can be used in all three cases. The crucial thing here is: Since *Mane* can be interpreted as a dative, matching is possible, and no resumptive occurs.

4.3. Matching and movement

While non-matching configurations show unambiguous signs of movement, we still have to test whether this also holds for examples involving matching. In the following example, reconstruction occurs under matching:²⁵

- (29) **Mit jedem Artikel** über **sich_i**, [wo de **Peter_i** **(*mit em)** aaggää hät],
 with every article about self C the Peter with it boasted has

²⁴ I am grateful to Kathrin Würth for drawing my attention to this fact.

²⁵ There are independent reasons why SCO cannot be tested in such examples: as shown in (13), local relativization across a dative is ruled out independently by principle B: the (resumptive) pronoun would be bound in its governing category by the relative clause subject; the relevant test case for SCO would then have to involve relativization across a clause-boundary as in (12) or (73), but as discussed in Salzmann (in prep.) there is no matching in those cases. For cases like (12), special properties of long-distance relativization make matching impossible. In cases like (73), resumptives are necessary to overcome the locality violation. See Salzmann (in prep.) for discussion.

Therefore, the necessary constellation to test SCO effects under matching does not exist.

hat sin Verleger au Erfolg ghaa.
has his publisher also success has

‘His publisher has had success with every article about himself_i that Peter_i was
boasting about’

This shows that matching relatives are also derived via movement.

4.4. Conclusion

I have established in the previous subsections that matching effects are form-based: Identity of Preposition and/or case is required while identity of thematic relation is not. I have furthermore shown that the difference between structural and inherent datives is irrelevant for matching, and that the matching generalization is sensitive to the actual surface form. Reconstruction effects under matching show that matching relatives must also be given a movement analysis.

5. The interpretation of resumptives

One of the crucial properties of resumptives that helps categorize the different types is their interpretation. Furthermore, there are sometimes asymmetries between gaps and resumptives that need to be explained.

As shown in Chao/Sells (1983), English resumptives, which only occur to prevent island violations, are not compatible with a bound variable interpretation. Consequently, they cannot have non-referential antecedents, i.e. quantifiers like *every*, *no* etc:

- (30) a) I’d like to meet **the linguist** that Mary couldn’t remember if she had seen __/**him** before.
b) I’d like to meet **every linguist** that Mary couldn’t remember if she had seen __/***him** before.

The readings that are available for resumptives in English have been subsumed under the E-type reading. Languages like Hebrew, Lebanese Arabic or Swedish (and many others), however, have resumptives that do allow bound variable readings (Chao/Sells 1983, Aoun et al. 2001), cf. the following example from Lebanese Arabic, where the left-dislocated antecedent is linked to a resumptive in the complement clause (Aoun et al. 2001: 390):

- (31) **kəll məzrim** fakkarto ʔənnə l-bolisiyye laʔatu-**u**
each criminal thought.2P that the-police.P caught.3P-him
‘Each criminal, you thought that the police caught him.’

There is one prominent case in the literature that shows another asymmetry between resumptives and gaps (Sharvit 1999: 593): Resumptives, unlike traces, do not easily support *de dicto* readings of relative clauses:

- (32) a) Dan yimca et **ha-iSa** Se hu mexapes ____.
Dan will.find acc the-woman C he look.for

- b) Dan yimca et **ha-iSa** Se hu mexapes **ota**.
 Dan will.find ACC the-woman C he look.for her
 ‘Dan will find the woman he is looking for.’ Hebrew

Whereas the first example is ambiguous between a *de dicto* reading (does not imply the existence of a woman) and a *de re* reading (which does imply the existence of a woman), the second one only allows a *de re* reading.

Applying these diagnostics to ZG, it seems that ZG differs from both English and Hebrew: Quantified antecedents are compatible with resumptives:

- (33) a) **Jedes Chind**, wot **em** es Sugus gisch, isch dankbar.
 every child C you he.DAT a Sugus give.2S is grateful
 ‘Every child who you give a candy is grateful.’
- b) Ich wett **jede Linguist** käne leere, wo s Susi **mit em** guet uuschunt.
 I would.like every linguist get.to.know C the Susie with he.DAT good gets.along
 ‘I would like to meet every linguist who Susie gets along with well.’

The gap/resumptive contrast noted for Hebrew does not obtain in ZG either. Both sentences are ambiguous between *de re/de dicto*, the external head can reconstruct below the intensional verb/the modal:

- (34) a) De Peter wird **d Frau** finde, won er _____ *suecht*.
 the Peter will the woman find C he _____ looks.for
 ‘Peter will find the woman he is looking for.’
- b) De Hans wird **die neu Sekretärin** scho finde,
 the John will the new secretary indeed find
 won er **mit ere** *cha* i s Usland reise
 C he mit her can in the abroad travel
 ‘John will find the new secretary with whom he can travel abroad’

However, these facts are arguably irrelevant because Bianchi (2004: 95f.) has shown that resumptives that appear in oblique positions are not subject to these restrictions. Since there are no resumptives for non-oblique arguments in local relativization, the relevant test case cannot be constructed, the point therefore remains moot.²⁶

6. Previous accounts of resumption

The major properties of resumptives in ZG that have to be explained are the movement effects on the one hand and the distribution of resumptives. In this section, I will very briefly review some previous accounts of resumption many of which cannot be applied to the data at hand. This is partly due to the fact that most of them are designed to explain specific patterns of resumption in particular languages without paying too much attention to the cross-linguistic variation. It is also partly a result of the fact that it is often taken for granted that resumption does not involve movement. Work by Demirdache (1991), Aoun et al. (2001), and Boeckx (2003) has challenged this position and will prove at least partially useful for the analysis of

²⁶ Things are different in long relativization where resumptives appear across the board. See Salzmann (in prep.) for discussion and analysis.

the ZG data. The only explicit account of the ZG data is by Van Riemsdijk (1989, 2004); I will discuss it at the end of this section.

6.1. Non-movement Approaches

McCloskey (1990), Shlonsky (1992), Suñer (1998), Rouveret (2002), and Adger/Ramchand (2004) all propose a base-generation approach to resumption even though the languages in question have different types of resumptives. The first three deal with Irish, Hebrew and Spanish, where resumptives are not sensitive to islands. The reason for base-generation rests solely on this fact. Other diagnostics for (non-)movement are not considered or as in McCloskey's and Shlonsky's account of SCO and WCO effects receive a representational analysis. Rouveret (2002) and Adger/Ramchand (2004) on the other hand are confronted with a very different problem: In Welsh and Scottish Gaelic, the following paradoxical situation obtains: While resumptives are sensitive to strong islands, there is otherwise no unequivocal evidence for movement (no reconstruction for binding, idioms and [sometimes] scope). These properties are captured by the assumption that the A'-dependencies are established via Agree without subsequent Move.

The second type of approach is geared towards languages with properties very different from those of ZG so that it need not be considered. The first class of approaches on the other hand fails to explain the reconstruction effects and more generally the properties of movement. Furthermore, the matching effects are completely unexpected under such approaches: The external context of the head noun should in no way influence the choice between movement and base-generation. Base-generation is therefore not an option for ZG.

6.2. Movement approaches

Movement approaches to resumption have become more prominent in recent years. One can distinguish at least three different types: Movement at LF (Demirdache 1991, 1997), the Big DP analyses (Aoun et al. 2001, Boeckx 2003), and those that treat resumptives as spelled out traces (Pesetsky 1998, Grohmann 2003). They make the correct prediction that resumption is compatible with movement effects. I will discuss them in turn:

Demirdache (1991/1997) argues that resumptives are in-situ operators, i.e. operators that move at LF. This assumption manages to capture the paradoxical nature of resumptives in Hebrew: Despite the absence of locality effects, resumptives show movement properties: They trigger SCO and WCO effects (see especially Demirdache 1997), license parasitic gaps and allow for reconstruction. Since LF-movement is assumed to be insensitive to Subjacency, the non-locality of many resumptive constructions falls into place. Independent evidence for movement of resumptives comes from optional resumptive fronting (Demirdache 1997: 195). However, there are a number of reasons to reject her approach on general grounds: While LF movement usually does not show subjacency effects it is still (often) assumed to be sensitive to the CED. Therefore, resumptives within adjunct and subject islands remain a problem unless more is said (cf. Aoun/Li 1993 on Chinese *wh-in-situ*). Furthermore, Parasitic Gaps are normally assumed to be licensed at S-Structure (Culicover 2001), but not at LF. Since resumptives do not move until LF, the licensing of Parasitic Gaps in Hebrew under resumption is unexpected. As for the ZG data, there is one major problem: Since the possibility of resumptives is partially dependent on the case assigned to the head noun, Demirdache would have to link LF-movement somehow to this property, which seems quite unlikely. Furthermore, the pattern we get in local relativization is not predicted. If

resumptives are generally in-situ operators, why don't we find them with subjects and direct objects in ZG?²⁷

As for the other two possibilities, it has actually become unclear whether they can be distinguished empirically. On a Big-DP approach (Aoun et al. 2001 and Boeckx 2003), resumptives are first merged with their antecedents which in the course of the derivation move away from them. They are therefore not directly part of the same chain as the antecedent. The Spell-out approach (Pesetsky 1998, Grohmann 2003, van Koppen 2005) basically assumes that a copy left behind by movement can be realized as a personal pronoun. The implicit assumption is that a pronoun is the most economical device to realize the phi-features of the copy. It is difficult to argue in favor of one or the other in purely theoretical terms as both have their advantages and disadvantages: A Big-DP approach seems generally ad hoc because it requires a base structure that is never instantiated overtly. But the same applies to the Spell-Out approach: It is normally the case that only one copy is phonetically realized so that extra assumptions are necessary to explain why the bottom copy can and in certain cases has to be realized as a personal pronoun. Since cases of multiple realization are attested (e.g. Nunes 2001), a Spell-Out approach may seem somewhat less ad hoc, but at the same time, Big-DP analyses have become popular recently as a general configuration to establish a relation between antecedents and anaphoric elements, cf. Kayne (2002). As for the empirical facts, both handle movement effects equally well. One of the major arguments of the Big-DP proponents is the fact that resumptives usually trigger a specific/D-linked/wide-scope interpretation of their antecedent (see also Bianchi 2004). If one assumes that the resumptive is simply a definite pronoun, such effects are entirely expected whereas the Spell-Out theory does not make that prediction. However, once one adopts a somewhat more elaborate notion of chain as in Bianchi (2004) that distinguishes them in terms of specificity, a Spell-Out approach seems able to handle resumption: The Spell-Out instruction will simply depend on whether a given chain bears a feature [specific]. And since – as shown in 5 – the relevant test cases cannot be constructed in ZG, interpretation cannot be used as a decisive factor anyway.

Another question is whether the specific distributional pattern that we find in ZG can be used to argue in favor of one or the other approach. As we will see in 7.1.1 below, the distribution of resumptives in local relativization can in principle be captured by both approaches. But there is one aspect that in my view seems to favor a Spell-Out approach: the matching effects. I will show below that the matching effects can be made to follow from a constraint on derived chains that are created under head raising in relatives. Since the resumptive is part of the same chain as its antecedent, such conditions can be stated more easily than with a Big-DP approach where the resumptive is only in a Spec-head relationship with its antecedent.²⁸

6.3. On Swiss German: van Riemsdijk (1989, 2004)

To conclude this section, I will discuss in some detail van Riemsdijk's work on ZG relative clauses. The distribution of resumptives is said to follow from an independently available process of cliticization: subject, direct and indirect object pronouns often cliticize onto C. This brings resumptives 'close enough to the head of the relative to permit deletion' (van

²⁷ Salzmann (in prep.) discusses further aspects of this approach some of which seem attractive for the analysis of long-distance relativization in ZG.

²⁸ I discuss the Spell-Out vs. Big-DP issue in more detail in Salzmann (in prep.).

Riemsdijk 1989: 347). This ‘explains’ the obligatoriness of resumptives in prepositional relations: Since there is no preposition stranding, the pronoun cannot cliticize onto C. The fact that the dative clitic must not be deleted in some dialects is argued to follow from the fact that indirect objects are in fact PPs. Van Riemsdijk derives this from the phonological similarity between datives and locative expressions (p. 351).

- (35) a) *em* Maa vs. *am* Maa
 the.DAT man at.the.DAT man
- b) *de* Frau vs. *a de* Frau
 the.DAT woman at the.DAT woman

The Schwa-like element in the masculine form is argued to be the preposition-like element. It is absent in feminine forms. Van Riemsdijk reanalyzes all forms that show dative morphology – essentially only pronouns and determiners – as PPs, as amalgamations of the locative preposition *a* ‘to, at’ followed by an NP pronoun – he does not indicate which case that pronoun would bear. Deletion of the entire complex is then prohibited by the ban on recoverability of deletion, and moving only the clitic is impossible because it is in some way (which van Riemsdijk does not specify) not independent enough to move on its own.

There are a number of problems with this proposal, one conceptual, several empirical. As for the conceptual problem, van Riemsdijk has to assume that cliticization is obligatory in relativization while it is optional elsewhere. The obligatoriness is derived from the Avoid Pronoun Principle, a transderivational constraint. Movement takes place so that the pronoun can later be deleted. Clearly, this involves non-trivial look-ahead: the grammar somehow has to know that it first HAS to move the clitic so it can later be deleted. Needless to say, such an approach is in contrast with the tendency within Generative Grammar to move away from transderivational evaluation.

There is also a number of empirical problems: The first involves the absence of A'-movement. Van Riemsdijk (1989: 344) explicitly states that Swiss German relatives – also those involving matrix subjects and direct objects do not involve A'-movement. This seems to imply that clitic movement is not an A'-movement process. Consequently, there is no A'-dependency in relative clauses. All he assumes is some co-indexing mechanism between the resumptives and the head-noun (perhaps mediated by C or Spec, CP). Since there is no operator-variable relation, it is unclear why relativization has the semantics it has: It is normally assumed that movement inside the relative clause derives a predicate which combines with the head-noun via intersective modification. It is unclear to me how this can be achieved given van Riemsdijk's analysis – at least an operator-variable relation is necessary for predicate abstraction (see Heim/Kratzer 1998). Furthermore, we do not expect any movement properties. The second point has been shown to be incorrect: reconstruction effects and Crossover effects clearly argue in favor of movement. The fact that resumptives also occur in islands does not mean that movement is never involved.²⁹

A further problem concerns datives. The explanation for the failure to delete the dative clitic does not stand up to scrutiny. First of all, it is not really clear how the surface form comes about. For instance, in the examples in (35) above, it is difficult to understand how *a* + something can give zero as in the feminine form. It is not clear what form and case the second component has. It cannot be dative because otherwise we end up in infinite recursion. It must be the accusative case then. In the masculine example, we would then have *a* + *de* = *em*. This seems morphologically implausible.

²⁹ As mentioned in footnote 16, I assume in Salzmann (in prep.) that even the cases with resumptives inside islands involve movement so that locality is not a good diagnostic.

Actually, the postulated preposition-like element seems to exist in quite a few Swiss dialects: They express dative with the additional help of a preposition-like element, *a* ‘at’ or *i* ‘in’, cf. Seiler (2001):

- (36) a) Ich han s Buech **i/a** de Mueter ggää.
 I have.1S the book PRP the.DAT mother given
 ‘I gave the book to the mother.’
- b) Ich han s Buech **im/am** Vatter ggää.
 I have.1S the book PRP.the.DAT father given
 ‘I gave the book to the father.’

In the feminine form, the dative-marker is separate, in the masculine form *i/a* + *em* give *im/am*, a straightforward morphonological process. For those dialects, it is highly unlikely that the dative pronoun actually contains a preposition – it is hard to motivate two dummy prepositions. Since the extra preposition-like element is also possible for some speakers of ZG, van Riemsdijk’s account faces difficulties. There are further problems:

Van Riemsdijk has to assume that it is possible to have a preposition governing prepositions e.g. when a preposition like *mit* ‘with’ assigns dative to a clitic: *mit em* ‘with he.DAT’. According to him it would actually govern a PP headed by the dummy-preposition *a*. Interestingly, this is exactly what happens to be impossible in those dialects which unambiguously use a preposition-like element, cf. Seiler (2001: 251):

- (37) * [mit [**i/a** de Frau]]
 with PRP the.DAT woman
 ‘with the woman’

Furthermore, if the dative resumptive were, say, *a* + personal pronoun, the second part would arguably be a clitic since the whole complex cannot be separated. However, Seiler (2001: 251) shows that the real dummy prepositions require the strong version of the pronoun, the weak/clitic one is out:

- (38) häd=mer=em=s gsëid? vs. *häd-mer-**i-em**-s gsëid? vs.
 häd-mer-s **i** **imm** gsëid?
 has=one=him.DAT=it told PRP he.DAT told
 ‘did they tell it to him?’ (dialect of Lucerne)

Furthermore, van Riemsdijk has to assume for those dialects which do not use dative resumptives that there the very same string *em* ‘to him’ does not have the status of a PP. While not impossible, such a solution is ad hoc and in the absence of independent evidence a restatement of the facts.

There are also technical problems: If dative clitics are indeed PPs, one has to explain how they can actually cliticize onto a head in the left periphery. It is unclear why this option does not exist for normal PPs. Van Riemsdijk seems to assume that cliticization is rather phonological in nature, i.e. dative clitics are the only PP-elements that are light enough to undergo this process. But then, it is unclear why in the case of the other PPs it is impossible to move only the light clitic and strand the preposition. If the movement is phonological, then there is nothing like the ECP that rules out preposition stranding.³⁰

³⁰ Perhaps, the cliticization rule only implies that the closest head is targeted, which would be the P for their complements whereas for structural arguments, it would be C. But this fails to explain those cases where the resumptive immediately follows the subject.

In other words: Van Riemsdijk has to assume properties for the dummy element that are quite different from those of the dummy elements that actually exist in Swiss dialects.

Finally, the matching effects remain generally unaccounted for in van Riemsdijk. They show that (some form of) deletion does play a role in the derivation of relative clauses in ZG, yet crucially does not involve subjects and direct objects. This suggests that properties other than the phonological weight of resumptives must be at stake, namely some sort of identity requirement that licenses the deletion of resumptives.

7. *The account*

In this section I present the assumptions necessary for a formal account. I first discuss the distribution of resumptives, which shows that they occur for reasons of morphological licensing of oblique case/prepositions and to prevent preposition stranding. Then, I discuss the derivation of relative clauses concluding that the head raising analysis is the most useful one for the data at hand, in particular because it provides a means (via incorporation) to link the relative clause internal context with the relative clause external context. This will be shown to underlie the matching phenomenon. Non-matching configurations, on the other hand, are linked to the independently available mechanism of Distributed Deletion.

7.1. *The distribution of resumptives in ZG relatives*

7.1.1. *Subject/direct object vs. oblique*

From the data presented at the beginning, it becomes clear that there is a division between subject and direct object on the one hand and the other relations on the other. The distinction between subject/direct object (which I will refer to as direct arguments) and PPs is unproblematic. The two direct arguments are licensed via abstract case, whereas PPs do not have to be case-licensed. The reason why there are resumptives in the latter case will be discussed in 7.1.2, in this subsection, I want to focus on the contrast between the direct arguments and datives. The division is, of course, reminiscent of the difference between structural and inherent case. This distinction correlates with a morphological distinction: While nominative and accusative are identical except for certain pronouns, the dative, which is the major (and almost only) case in oblique relations (some prepositions assign accusative), is clearly distinct. But is this correlation meaningful?

While it is undisputed that there are different types of datives in German (dialects) and that some of them show certain properties reminiscent of structural arguments (predictability of their position, get-passive, cf. Wegener 1985, 1991, Gallmann 1992), all datives also differ systematically from nominative and accusative as shown convincingly in Vogel/Steinbach (1998) and Bayer et al. (2001). I will not review all of their arguments, but will simply mention two: datives cannot bind anaphors while direct objects can (39) (Vogel/Steinbach 1998: 73), and datives are barriers for extraction while direct objects are not (40), (Vogel/Steinbach 1998: 74f.):

- (39) a) dass der Arzt_i; **den** Patienten_j; sich_{i/j} im Spiegel zeigte
 that the.NOM doctor the.ACC patient self.DAT in.the mirror showed
 'that the doctor showed the patient to himself in the mirror.'

b) dass der Arzt_i **dem** Patienten_j sich_{i/*j} im Spiegel zeigte
 that the.NOM doctor the.DAT patient self.ACC in.the mirror showed
 'that the doctor showed the patient to himself in the mirror.'

(40) a)* [Über wen]_i hat der Verleger [einem Buch t_i] keine Chance gegeben?
 about whom has the editor a.DAT book no chance given
 Lit.: 'Who did the editor give a book about no chance?'

b) [Über wen]_i hast du [ein Buch t_i] gelesen?
 about whom have you a book read
 'Who did you read a book about?'

This oblique behavior correlates with special morphological licensing conditions. Like the oblique case genitive, dative requires overt case marking to be licensed as the following four asymmetries show: First, complement clauses in German cannot directly fill the slot of a dative argument (Bayer et al. 2001: 471):

(41) a) Wir bestritten, [dass wir verreisen wollten]. ACC
 we denied that we travel.away wanted
 'We denied that we wanted to go away.'

b)* Wir widersprachen, [dass wir verreisen wollten]. DAT
 we objected that we travel.away wanted
 'We denied that we wanted to go away.'

c) Wir widersprachen [**der Behauptung**, [dass wir verreisen wollten]]. DAT
 we objected the.DAT claim that we travel.away wanted
 'We denied that we wanted to go away.'

CPs cannot realize morphological case. A DP has to be inserted to rescue the example. The structural cases nominative and accusative do not require this extra licensing, abstract case is sufficient. Second, certain indefinite quantifiers in German do not inflect for case. Interestingly, they can function as bare subjects or direct objects but not as datives (Bayer et al. 2001: 472):

(42) a) Wir haben genug / nichts/ allerlei/ etwas/ wenig erlebt ACC
 we have enough nothing a.lot something little experienced
 'We have experienced enough/nothing/a lot/something/little.'

b)* Feuchtigkeit schadet **genug/ nichts / allerlei/ etwas/ wenig** DAT
 humidity harms enough nothing a.lot something little
 'Humidity harms enough/nothing/a lot/something/little.'

Some of these adjectives have an inflected form, which is optional for the structural cases, but obligatory for datives (Bayer et al. 2001: 472):

(43) a) Wir haben schon viel-(es) / nur wenig-(es) erlebt.
 we have already much-(ACC) only little-(ACC) experienced
 'We have experienced much already/only little.'

b) Das schadet/gleicht/ ähnelt viel-*(**em**)/ wenig-*(**em**).
 that harms equals resembles much-(**DAT**) little-(**DAT**)
 'This harms equals/resembles much/little.'

In 7.3 below, I will choose a Spell-Out approach because I think the matching effects can be modeled more straightforwardly with it.

7.1.2. Resumptives to prevent preposition stranding

Prepositions are similar to datives in that they are normally not recoverable if not expressed morphologically (Bayer et al. 2001: 489), i.e. the same arguments for clausal licensing, topic drop, and comparatives apply here as well. Consequently, it comes as no surprise that they also cannot be dropped in relative clauses.³¹ But this still does not explain why resumptives occur as well, as in the following example:

- (47) D Frau, won i von *(ere) es Buech übercho han isch nett
 the.NOM woman C I from (she.DAT) a book received have.1S is nice
 ‘The woman from whom I got a book is nice.’

I argue that this follows from a general ban on preposition stranding in ZG (cf. Fleischer 2001: 123f.). In this area, resumptives act as a last resort to prevent a locality violation (which I will re-interpret as a PF-constraint, see footnote 40). Just like datives, P can be dropped in very specific constellations, namely when the head noun of the relative clause is governed by the same preposition. In this constellation, the content of P is recoverable. A formal account is presented in section 8.2.

7.2. The derivation of relative clauses in ZG

I assume that restrictive relative clauses in ZG are derived via head raising. The head raising analysis (HRA) goes back to Brame (1968), Schachter (1973), and Vergnaud (1974). More recently, it has been revived by Kayne (1994), Bianchi (1999, 2000a, 2000b), Bhatt (2002), and De Vries (2002). There are two crucial arguments in the present context in favor of the head raising analysis: First, it straightforwardly explains the reconstruction effects: since the head noun starts out inside the relative clause, it comes as no surprise that it can be interpreted inside the relative clause via reconstruction/interpretation of the lower copy.³² On the head external analysis (Chomsky 1977) reconstruction effects are at least problematic because the head noun is not directly linked to a relative clause internal position, but only via the *wh*-operator.³³ For present purposes I simply follow recent work that takes reconstruction effect to be decisive evidence in favor of the HRA.³⁴ Second, as we will see presently, the HRA provides a means to link the relative-clause-internal A'-chain with the external context via incorporation of the relative D into the external D.

When adopting the HRA, there are still a number of options that have been discussed in the literature: The head NP stays inside the relative CP (Kayne 1994, De Vries 2002) or the head NP moves out of the relative CP (Bianchi 1999/2000a-b, Bhatt 2002). On Kayne's/De Vries'

³¹ It is tempting to capture this similarity with the KP hypothesis (Bayer et al. 2001), where both oblique morphological case and prepositions license a KP layer on top of oblique DPs.

³² There is a large number of other (crosslinguistic) evidence for the HRA that I cannot review here, but see Kayne (1994), Bianchi (2000a), and De Vries (2002).

³³ Admittedly, this assumption is to some extent theory-internal and certainly has to do with the way reconstruction is handled in the Minimalist Program, i.e. as the interpretation of a lower copy. Reconstruction via binding of operators does not find a natural place within the Minimalist system even though it is by no means implausible as such.

³⁴ In Salzmann (in prep.) I discuss a wider range of facts (many of which raised in a recent paper by Heck 2005) that leads to a reappraisal of some of the conclusions found in this text. Especially, a Matching Analysis (Sauerland 1998) proves superior in a number of respects.

approach, if the relative operator is zero (as in *that*-relatives), there is just movement to Spec, CP, and nothing further happens, (48)a. If the operator is complex, the head noun moves to the specifier of the relative operator, (48)b, in de Vries (2002: 123ff.) with subsequent feature movement from N to the external D (48)c. On Bianchi's and Bhatt's approach, the head noun moves out of the relative clause to adjoin to the CP ((49)a, cf. Bhatt 2002) or moves to the specifier of some higher functional head ((49)b, cf. Bianchi 1999/2000a-b, Bhatt 2002: 84):

- (48) a) the $[_{CP} [_{NP} \text{book}]_i \text{ that John likes } t_i]$
 b) the $[_{CP} [_{NP} \text{book}]_j [_{N'} \text{ which } t_j]_i \text{ John likes } t_i]$
 b) FF_j+ the $[_{CP} [_{NP} \text{book}]_j [_{N'} \text{ which } t_j]_i \text{ John likes } t_i]$

- (49) a) the $[\text{book}]_j [_{CP} [_{NP} \text{Op/which } t_j]_i \text{ John likes } t_i]$
 b) the $[_{XP} [\text{book}]_j [_{X'} X^\circ [_{CP} [_{NP} \text{Op/which } t_j]_i \text{ John likes } t_i]]]$

The last two derivations are necessary to account for extraposition because the external determiner and the head noun form a constituent to the exclusion of the relative CP. Since I will not discuss extraposition here, I will ignore this complication and simply assume movement to an operator position within the relative clause.

Another point where the approaches differ is the type of category that is raised. Kayne (1994) originally proposed that relatives only involve raising of an NP. There are a number of facts that lend some initial credibility to this proposal, for instance, there are no definiteness effects if a definite head noun combines with a relative clause involving *there*: *the book that there was on the table*, scope reconstruction with a definite head noun (*the two patients that every doctor will examine*), and the exceptional compatibility of definiteness with proper names and idioms like *the Paris* *(*I like*). On the other hand, Bianchi (1999, 2000b) convincingly demonstrated that raising only an NP is problematic: First, it has been shown (e.g. Longobardi 1994) that arguments are DPs while NPs can only serve as predicates. Second, the XP that is moved behaves like a referential phrase (in Cinque's 1990 terms) w.r.t. locality, i.e. it can be extracted across weak islands, and it can license PRO. So there are good reasons to assume both NP and DP raising at the same time. The paradox can be resolved by the assumption that what moves initially is a full DP, but that the external D is not reconstructed into the relative clause. There are essentially two implementations of this: Either Movement of a DP to Spec, CP with subsequent subextraction of the head NP as in Bianchi (2000b) and Bhatt (2002), basically as indicated in (49)b. Alternatively, there is DP-movement to Spec, CP with subsequent incorporation of an underspecified D into the external D (Bianchi 1999/2000b).

I will choose the second option because it is unclear whether there are any higher heads in the left periphery in ZG and because – as we will see presently – it is better suited to model the matching effects. That the external D does not reconstruct has already been shown by the scope reconstruction facts in (8) and(9). Existential contexts are also possible:

- (50) a) **Jedes Buech** wo s uf em Tisch hät
 every book C it on the table has
 'every book that there is on the table'
 b)*Es hät **jedes Buech** uf em Tisch.
 it has every book on the table
 lit.: 'There is every book on the table.'

Although there are no relative pronouns in ZG I assume that the DP that is moved is headed by a D with an operator feature, so that it corresponds to an empty relative pronoun (cf. De Vries 2002: 126). Movement is triggered by an operator feature on C against which the respective feature on D is checked, thereby avoiding some of the complications of Bianchi's (2000b) system, cf. De Vries (2002: 115). Importantly, this empty relative pronoun is underspecified for definiteness to capture the *there*-contexts and scope reconstruction. The final (simplified) derivation looks as follows (the incorporation of D will be discussed in the next section):³⁵

$$(51) \quad [{}_{DP} D + D_i [{}_{CP} [{}_{DP} t_i NP]_j C [{}_{IP} [{}_{VP} t_j V]]]]$$

7.3. Matching as incorporation

The major reason why datives and PPs have to be realized in ZG relative clauses is recoverability: As oblique phrases, they cannot be structurally licensed, but instead require morphological licensing. Under very specific circumstances, this licensing requirement seems to be lifted, namely when the head noun receives exactly the same type of morphological marking, i.e. under matching. I conclude from this that the oblique marking is recoverable under matching. For a formal account, we need a link between the external context, i.e. the external D and P and the internal context, i.e. the moved DP/PP. I propose that matching is to be understood as incorporation of relative clause internal material (i.e. D/P) into external material, i.e. D/P (cf. also De Vries 2002: 220). If the complex heads derived via incorporation have compatible case features, the oblique case/the P is accessible for the relative clause internal copy because it is part of a (modified) chain that includes the required morphological expression, namely on the complex D/P head. This is why dative resumptives and prepositions can be dropped under matching. Incorporation leads to the following representations:

$$(52) \text{ a) } [{}_{DP} D_i + D [{}_{CP} [{}_{DP} t_i NP]_j C [{}_{IP} [{}_{VP} t_j V]]]]$$

$$\text{ b) } [{}_{PP} P_k + P [{}_{DP} D_i + D [{}_{CP} [{}_{PP} t_k [{}_{DP} t_i NP]]_j C [{}_{IP} [{}_{VP} t_j V]]]]$$

These derivations raise three questions: a) What triggers this movement? b) Why aren't the PP-examples out because of a violation of the Head Movement Constraint (HMC)? c) how are these complex heads spelled out?

Ad a): I assume that D (and P) can carry features that attract a head of the same category, but only if they (D, or, in the case of P, their complement) select a relative clause. This can be stated economically in the lexical entry of D (and P).

Ad b): The PP-derivations violate the HMC (Travis 1984) because the internal D moves across P in Spec, CP, and P moves across the external D: However, under the Minimal Link Condition (MLC, Chomsky 1995) a different interpretation is possible: An intervening head will only block movement if it could check the same feature, i.e. if it in some relevant sense of the same type. But since the attracting feature is only sensitive to the exact grammatical category, a D will not block movement of P, and neither will P block the movement of D. Similar arguments have been used for instances of long head movement, cf. Carnie et al. (2000).³⁶

³⁵ Heck (2005) correctly objects that such derivations violate the CED. This seems to be the price one has to pay to treat the matching effects as conditions on chains as proposed in the next subsection.

³⁶ In those cases, the relevant distinction is usually between A vs. A'-head position. A possible analogy to the present case might be the requirement of T to have a DP in its specifier (i.e. the EPP). Intervening maximal

Ad c) I assume a late insertion approach to morphology, in the spirit of Halle/Marantz (1993). This means that the syntax only manipulates features. When Vocabulary Insertion takes place at PF, the complex heads derived via head movement are spelled out as one lexical item if their parts agree in phi and case features (dative) and lexical features (prepositions). If insertion is successful, i.e. if a lexical item can be found that is compatible with the feature requirements, we obtain matching. If there are conflicting features (e.g. different case features) insertion fails, and the derivation crashes.

So far we know how matching cases are derived, but we still need to explain the non-matching cases. The next section shows that they are based on a mechanism that is independently available in ZG: Distributed Deletion.

7.4. *A'-splits as Distributed Deletion*

ZG *A'*-movement generally allows for a peculiar way of spelling out operator and case information: In addition to regular full category movement, it is optionally possible to spread operator and case information over two copies: A case-unmarked DP appears in the operator position while case (including prepositions) is realized in the base position. This is an instance of Distributed Deletion. I will refer to these constructions as *A'*-splits. The following examples illustrate this for *wh*-movement:

(53) a) **Wer** häsch gsäit, dass ich ***(em)** das Buech cha verchaffe?
 who.–OBLIQUE have.2S said that I he.DAT the book can sell
 ‘To whom did you say that I can sell the book?’

b) **Wer** häsch gsäit, dass t ***(mit em)** wetsch go tanze?
 who.–OBLIQUE have.2S said that you (with he.DAT) would.like go dance
 ‘With whom did you say that you would like to go dancing?’

These constructions are derived as follows: The case feature can optionally be deleted after checking. As a consequence, the moved phrase will only have an operator feature on D but no longer a case feature. Both case and operator information must be spelled out (their features are strong), but because they are not present in the same copy, parts of both copies are spelled out, expressing the respective feature content. There is a certain amount of overlap (D is realized twice) because D hosts the two crucial features.³⁷

It remains to be explained why case is realized as a pronoun and not just as a D element, i.e. as a determiner. I suggest that this follows from a constraint that requires the resulting copies to conform to the normal structure of DPs. This type of regeneration is generally found with split DPs, cf. Fanselow/Cavar (2002).

What determines the availability of this type of splitting? I assume that ZG has a crucial property that makes this possible: Case is only represented on D, but no longer on N.

The crucial point for the current discussion is that such a derivation lies at the heart of resumption in ZG: The case feature is only present in the base position and has to be spelled out there. The DP that moves on is underspecified for case so that as a consequence there will

categories like VP, vP, NegP etc. do not block movement of a DP because they simply belong to a different category type.

³⁷ The precise mechanism assumed here for Distributed Deletion is thus somewhat different from the one proposed in Fanselow/Cavar (2002).

never be a feature clash on the complex D head. The following section provides an explicit account of all the relevant derivations.³⁸

8. ZG relative clauses and distributed deletion

8.1. Dative

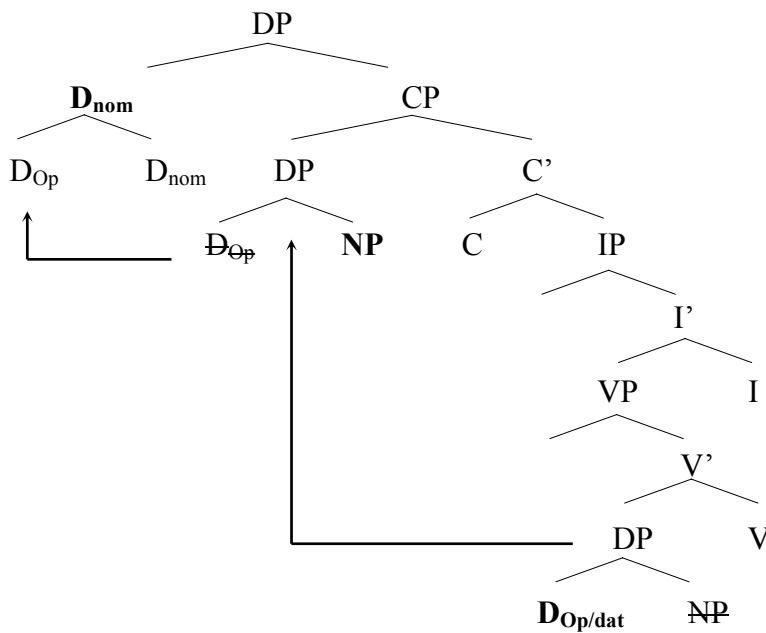
I will first discuss the non-matching examples, cf. (1)c, repeated here:

- (54) De Bueb, [wo mer ***(em)** es Velo versproche händ], isch tumm.
 the.NOM boy C we (he.DAT) a bike promised have.1P is stupid
 ‘The boy who we promised a bike is stupid.’

Suppose a normal A'-derivation with movement of a fully specified DP to Spec, CP. Subsequent incorporation of D into the external D will lead to a case clash (nom vs. dat) so that insertion fails and the derivation crashes. An A'-split derivation, however, derives the desired result: the fronted DP is underspecified for case so that incorporation of D and insertion succeed. Spelling out the case feature in the base position leads to a resumptive. The following structure represents the converging derivation (bold-faced constituents are spelled out, strike-through means non-pronunciation, irrelevant parts are omitted):

³⁸ Adjectives present certain problems because they can also bear morphological case. In a matching derivation, this is no problem, the adjective is part of the DP raised to Spec, CP and is spelled out there with the corresponding case feature, e.g. dative. In the resumptive derivation, it is not so clear what happens. The adjective will eventually bear the same case as the external D and therefore not the case it is assigned relative clause-internally, a general problem for the HRA (cf. Bianchi 2000b, Heck 2005). The problem normally also obtains with N, but since N does not bear morphological case in ZG, it is only relevant for adjectives. A possible solution is Bianchi's (2000b) late feature copying approach where case features can be overridden under government by the external D. Alternatively, one could assume that the case feature of the adjective is also deleted after checking as with D.

(55) [DP D_{Op} + **D_{nom}** [CP [DP D_{Op} NP] C [IP [VP [DP **D_{Op/dat}** NP] V]]]]



Tree 1

A matching derivation is simpler, cf. the following example, repeated from (16)a:³⁹

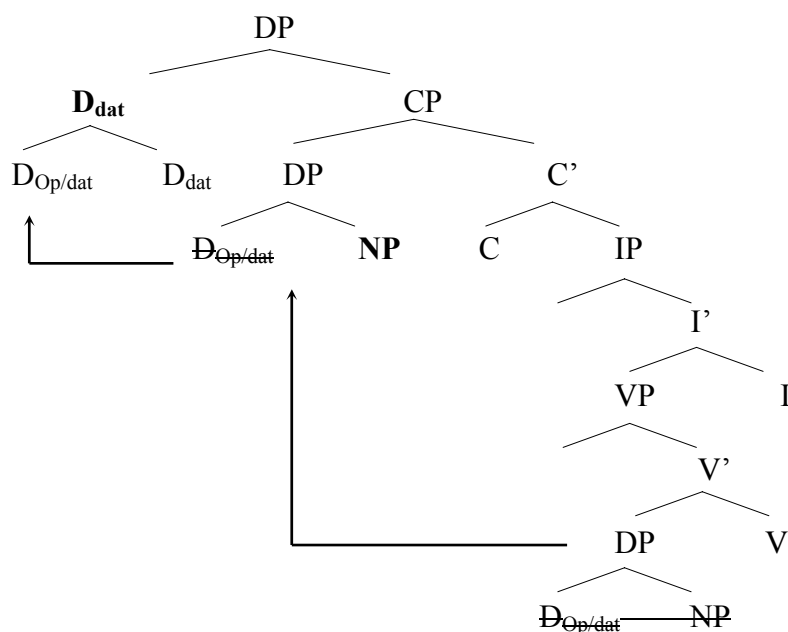
(56) Ich han **em** **Bueb**, [wo t (***em**) es Buech versproche häsch],
 I have.1S the.DAT boy C you (he.DAT) a book promised have.2S
 es schöns Exemplar ggää.
 a beautiful copy given

‘I gave the boy who you promised a book a beautiful copy.’

It involves moving a fully specified DP. Subsequent incorporation leads to case compatibility so that insertion succeeds. No case feature is left inside the relative clause and as a consequence no resumptives appears:

³⁹ The same derivation applies to (19)

(57) [DP D_{Op/dat} + **D_{dat}** [CP [DP D_{Op/dat} **NP**] C [IP [VP [DP D_{Op/dat} NP] V]]]]



Tree 2

8.2. PPs

I will first discuss a case where there is only an external D but no P and case matching, cf. (20), repeated here:

(58) Ich han **em** **Maa**, [won i ***(von em)** es Buech übercho han],
 I have.1S the.DAT Man C I (from he.DAT) a book received have.1S

zwänzg Stutz ggää.

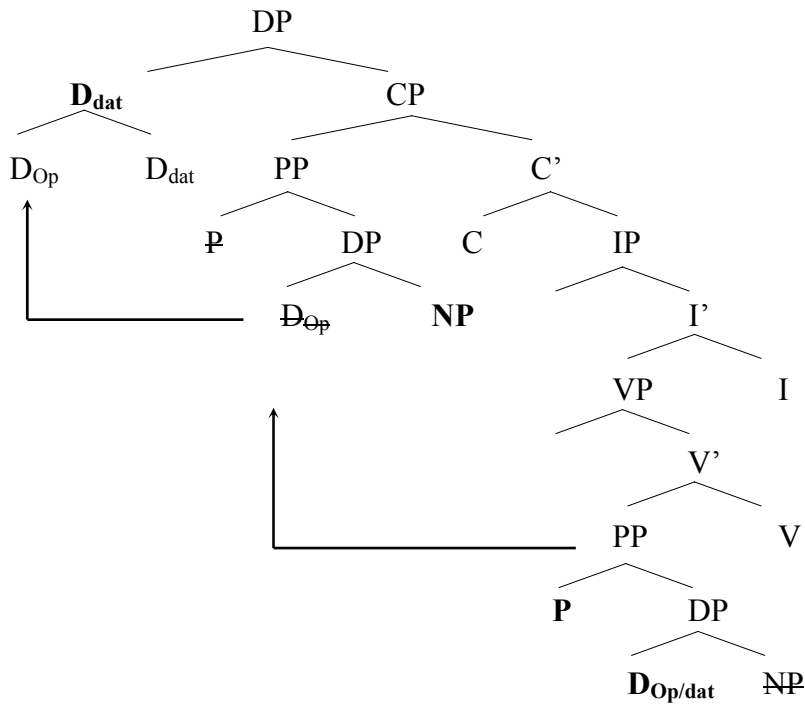
twenty bucks given

‘I gave the man from whom I had received a book twenty bucks.’

Movement of a fully specified DP with subsequent incorporation leads to compatible case features so that no resumptive is expected. However, this leads to preposition stranding, and the derivation crashes. The only converging derivation involves Distributed Deletion. As a consequence, case is spelled out in the base position. It remains to be explained why the preposition is also spelled out in the base position and not in Spec, CP. It is again the ban on preposition stranding which favors pronunciation of the lower copy (P would be without a D in Spec, CP). The final output is thus due to a conspiracy of factors.⁴⁰

⁴⁰ Note that the notion of preposition stranding employed here is to be understood as a PF constraint, which rules out representations where P does not have a DP complement. If P were spelled out in Spec, CP, it would have an NP complement, but crucially, D would be empty. It might be possible to derive this restriction from the morphological licensing requirement on oblique case, assuming that P always assigns oblique case.

(59) [_{DP} D_{Op} + **D_{dat}** [_{CP} [_{PP} P [_{DP} D_{Op} **NP**]] C [_{IP} [_{VP} [_{PP} **P** [_{DP} **D_{Op/dat}** **NP**]] V]]]]]



Tree 3

The same derivation applies if there is a non-matching external case. More interesting are cases with a PP both externally and internally. In the following example, there is case matching, but the prepositions differ, cf. (22), repeated here:

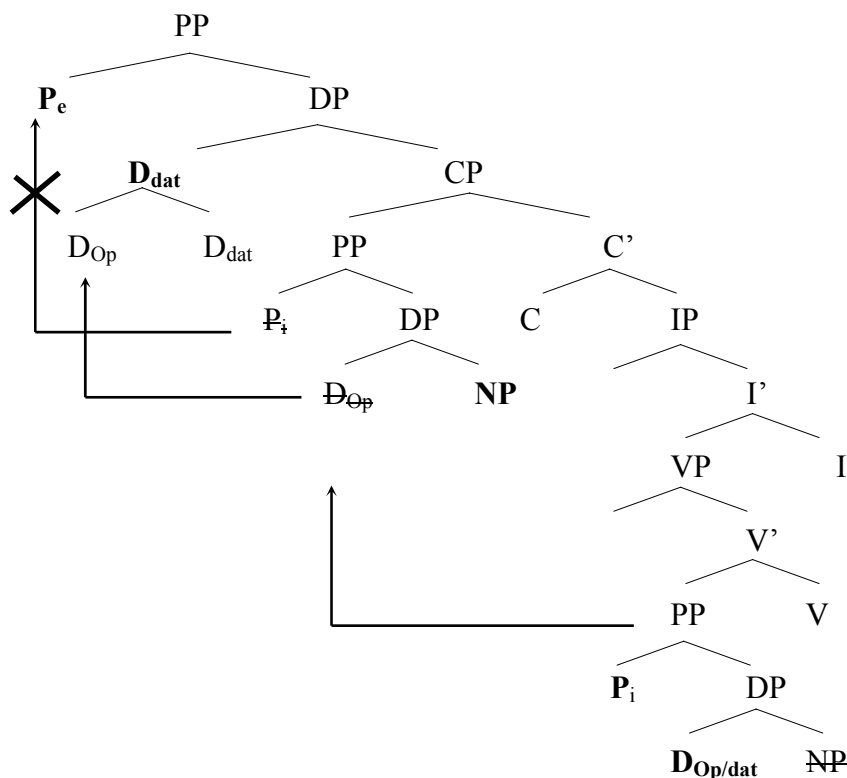
(60) Ich ha vo de Lüüt, [won i *(mit ene) i d Schuel bin],
 I have.1S from the.DAT people C I (with they.DAT) in the school am
 scho lang nüüt me ghöört.
 already long nothing anymore heard

‘I have not heard for a long time from the people with whom I went to school.’

Incorporation of the internal D does not lead to a case clash so that no resumptive is expected. However, P-incorporation leads to a clash in lexical features. Consequently, P needs to be realized inside the relative clause.⁴¹ This in turn requires case to be spelled out to prevent preposition stranding so that only an A'-split derivation converges. Both P and D are realized in the base position due to a conspiracy of factors: Case can only be spelled out in the base position (due to the A'-split derivation) so that the preposition is spelled out there as well:

⁴¹ For this account to work, I need to assume that P-incorporation (as opposed to D-incorporation) is optional.

(61) [PP **P_e** [DP **D_{Op}** + **D_{dat}** [CP [PP **P_i** [DP **D_{Op}** **NP**]] [IP [VP [PP **P_i** [DP **D_{Op/dat}** **NP**]] V]]]]]



Tree 4

The same derivation applies to the configuration where both case and preposition are different, cf. (21) and (23), where the prepositions are identical but the cases differ. In the latter case, P-incorporation and fusion fails because homophonous prepositions that can assign different cases differ in their lexical features. The last case to consider involves identical prepositions and case matching cf. (16)b, repeated here:

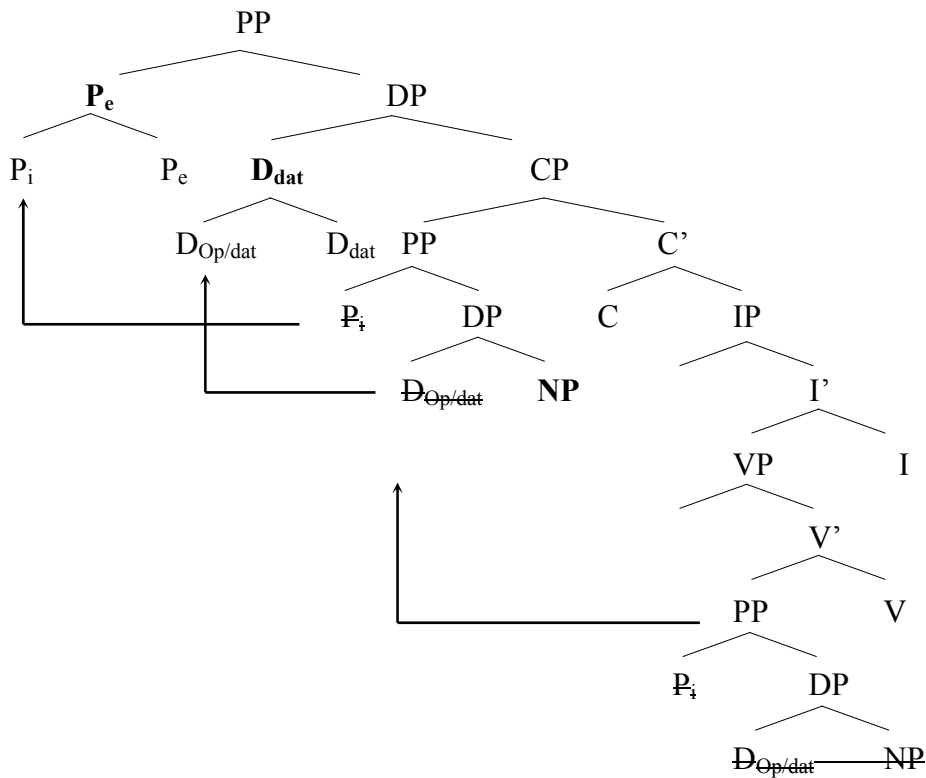
(62) Ich ha vo de Frau, [won i scho geschter (*von ere)
 I have.1S from the.DAT woman C I already yesterday (from she.DAT)

es Buech übercho han], wider eis übercho.
 a book received have.1S again one received

‘I received from the woman from whom I had already received a book yesterday another one.’

Here both D and P incorporation result in compatible features. Neither D nor P needs to be spelled out inside the relative clause:

- (63) $[[_{PP} P_i + P_e [_{DP} D_{Op/dat} + D_{dat} [_{CP} [_{PP} P_i [_{DP} D_{Op/dat} NP]] C [_{IP} [_{VP} [_{PP} P_i [_{DP} D_{Op/dat} NP]] V]]]]]]]$



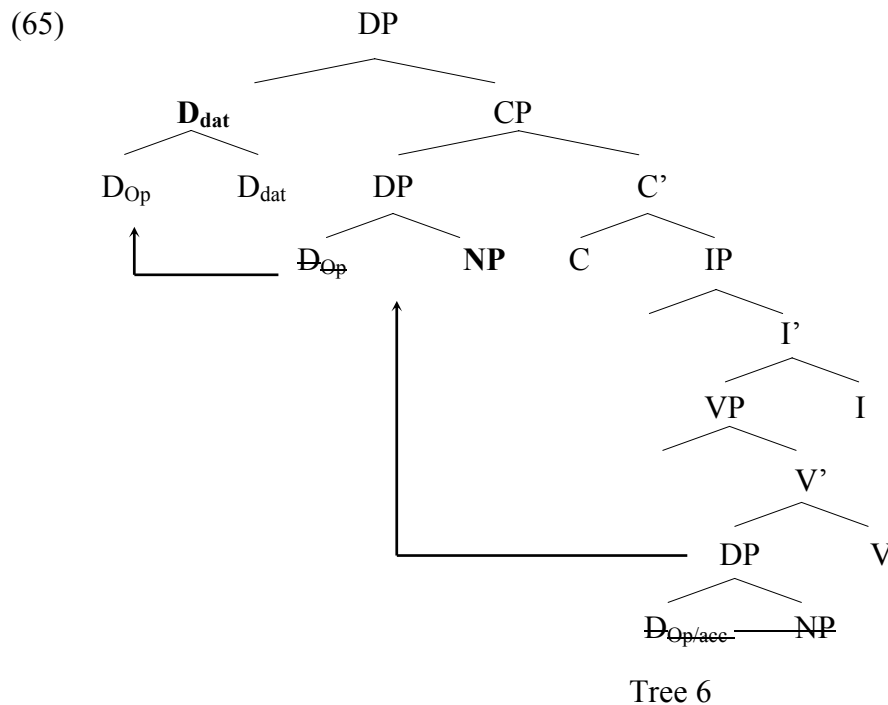
Tree 5

8.3. Subject and direct object

Relativization of subjects and direct objects with an oblique external D is problematic:

- (64) Ich ha **de** Frau, woni ___ käne gleert ha, Blueme gschänkt.
 I have.1S the.DAT woman C I ACC know got have.1S flowers given
 'I gave flowers to the woman who I met.'

Since there is a case clash, insertion fails and the only converging derivation would be of the A'-split type. However, we do not find resumptives, the stranded case feature does not have to be realized:



In the following section, I will discuss solutions to this and one further problem.

8.4. Conditions on PF chains, Spell-out, and recoverability

We are now in a position to formulate the licensing conditions for oblique case and prepositions on the one hand and for structural cases on the other. Cases normally have to be realized unless they are recoverable. Crucially, the conditions on recoverability are stricter for oblique cases and PPs than for structural arguments

Structural cases do not need morphological licensing, they are always structurally recoverable in relative clauses because a part of its (modified) chain receives case, namely the external D. This requirement overrules the spelling out of the stranded case feature in (65). Datives and PPs, however, always need morphological licensing. Crucially, oblique case must be unique within a given (modified) chain. It is either realized in the base position as a resumptive or on the head noun, which also forms part of the chain. This uniqueness condition is necessary to rule out a further possible derivation: Nothing so far ruled out applying Distributed Deletion under matching. At the point where the case feature is erased, the computational system does not yet know that eventually a matching configuration obtains. Preventing Distributed Deletion in this case would involve non-trivial look-ahead. Instead, Distributed Deletion is always an option. If it applies under matching, a representation results where the (modified) chain contains two occurrences of oblique case/prepositions. The uniqueness condition on oblique case at PF rules out such a case.

8.5. The Importance of the surface forms

So far, I have presented no evidence in favor of a late insertion approach to the matching phenomena discussed in this paper. Example (28), repeated here, crucially showed that the surface form is crucial for matching:

- (66) \emptyset D Mane, [won i (***ene**) es Buech gib], müend intellektuell sii.
 D men(NOM) C I (they.DAT) a book give.1S must.P intellectual be
 ‘Men to whom I give a book must be intellectual.’

This follows under the approach advocated here: The fully specified internal D incorporates into the external D. This results in a case conflict: nominative vs. dative. One expects that insertion fails. However, there is an underspecified lexical item that can resolve this conflict: For indefinite plural, the empty determiner is inserted. It seems unreasonable to posit three homophonous empty determiners with different case specifications. Instead, it is much more plausible that there is only one, and it is underspecified for case. Insertion is subject to the specificity principle. Since the empty determiner is the most specific form available and since it does not conflict with the feature specifications, insertion is successful and the derivation converges.

8.6. Overview over the matching configurations

The following table summarizes all configurations discussed in this paper:

	external case	internal spell-out
= (17)	nom/acc	nom/acc
= (1)c, (54)	nom/acc	dat
= (1)d, (47); (20), (58)	nom/acc/dat	P + nom/acc/dat
= (16)a, (56) <i>matching!</i>	dat	dat
= (64)	dat/P + acc/dat	nom/acc
= (22), (60)	P _a + dat	P _b + dat
= (19), (56) <i>matching!</i>	P + dat	dat
= (16)b, (62) <i>matching!</i>	P _a + acc/dat	P_a + acc/dat
= (23), (61)	P _a + acc/dat	P _a + dat/acc
= (21), (61)	P _a + acc	P _b + dat

9. Conclusion

The study of resumptives in ZG is very important because it reveals a new pattern of resumption that must be made available by UG. Resumptives in ZG are crucially linked to the licensing of oblique case and PPs. They occur to license oblique relations unless the case assigned by the external context to the head noun makes the very same morphological information available via a modified chain. These properties follow straightforwardly under the proposal advanced here: Restrictive relatives in ZG are derived via head raising and incorporation of relative clause internal material into relative clause external material. Matching is formalized as incorporation under identity while resumption is a result of Distributed Deletion.

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