When movement and base-generation compete –
on the definition of the reference set, the typology of resumption, and ranked economy constraints

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Abstract
Economy constraints in Minimalist syntax are usually taken to be universal. If an economy constraint C penalizes a derivation/representation in language A, it will also do so in language B. This paper presents a type of crosslinguistic variation that casts serious doubts on this assumption, namely the distribution of resumptive relatives vis-à-vis gap relatives. It is shown that while resumption is a last resort in languages like Zurich German, i.e. occurring only when gap relatives are barred, it can be an optional strategy in languages like Hebrew/Irish, thus occurring in the same environment as gap relatives. For the first type of language this implies that gap and resumptive relatives are in the same reference set and compete and that gap relatives block resumptive relatives. Gap relatives are shown to involve movement while resumptive relatives are derived by base-generation in Zurich German. Since a different set of lexical items is involved in the two derivations the reference set must be based on identical LFs rather than identical numerations. However, once this is established it is surprising that no blocking obtains in the second group of languages. Several options to solve this problem will be evaluated. It will be shown that the variation is best modeled by means of different rankings of interacting and violable constraints. The ban against resumption will be subsumed under a general constraint that penalizes External Merge.

The paper is organized as follows: section one introduces basic facts about relativization in Zurich German. Section two explains the distribution of resumptives in Zurich German relatives. Section three discusses possible analyses of resumption under the assumption that gap and resumptive relatives are based on the same numeration. Section four reviews possible economy constraints that block resumption. Section five addresses pseudo-optionality. Section six shows that cross-linguistic variation requires a different interpretation of economy constraints, and section seven concludes the paper.[1]

1 Introduction: relativization in Zurich German

Zurich German relatives are postnominal and head external. Importantly, there are no relative pronouns (except for certain adverbial relations), but instead an invariant complementizer *wo* (*won* before vowel-initial clitics) introduces relative clauses.[2] In certain grammatical relations, a resumptive pronoun appears instead of a gap. In the default case the resumptives behave like weak personal pronouns and are fronted to the Wackernagel position or are cliticized onto C (or, in case of oblique objects, onto the governing preposition). The distribution of resumptive pronouns in local relativization follows the Accessibility Hierarchy by Keenan & Comrie (1977) in that resumptive pronouns are found from the dative object on downwards but crucially not for subjects and direct objects (cf. Weber 1964, van Riemsdijk 1989):[3]

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[2] See Salzmann (to appear a, fn. 2) for qualifications.
[3] Most of the data are taken from Salzmann (2006b) unless indicated otherwise. The facts described here hold for most Swiss German dialects, the only area of variation being datives, cf. below. I am very grateful to the following people for providing judgments: Barbara Bächli, Silvio Bär, Kathrin Büchler, Petrea Bürgin, Martin Businger, Peter Gallmann, Martin Graf, Beatrice Hartmann, Maja

(1) a. d Frau,   wo **(*<u>si</u>)** immer z   spaat chunt   (subject: *wo* + gap)
      the woman C   (she)   always too late comes
      'the woman who is always late'

  b. es Bild,   wo niemert **(*<u>s</u>)** cha zale   (direct object: *wo* + gap)
      a picture C nobody   (it) can pay
      'a picture that nobody can afford'

  c. de Bueb, wo mer ***(em)**   es Velo versproche händ
      the boy   C we (he.DAT) a bike promised   have.1PL
      'the boy we promised a bike'   (indirect object: *wo* + res.)

  d. d   Frau,   won i von ***(ere)** es Buech überchoo han
      the woman C   I from (she)   a book   got   have.1SG
      'the woman from whom I got a book'   (P-object: *wo* + res.)

  e. d   Frau,   won i mit ***(ere)** is   Kino   ggange bin
      the woman C   I with her   in.the movie went   am
      'the woman that I went to the movies with'   (P-adjunct: *wo* + P + res.)

Resumptives are also found inside islands. In that case, subjects and direct objects also require resumptives (islands are indicated by angled brackets, cf. Salzmann 2006b: 330):[4]

(2) a. 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)

     The syntax of dative relativization is more complex. With certain verbs (especially experiencer verbs), neither a gap nor a resumptive leads to a completely well-formed result, cf. Salzmann (2006b: 323–326). Additionally, there generally is a lot of intra-speaker variation: many speakers accept both gap and resumptive, cf. Salzmann (2008/to appear a), Salzmann & Seiler (in prep.) and 6.2 below.

4 Importantly, unembedded PPs like those in (1d–e) also represent intransparent domains: there is no preposition stranding in Zurich German; pied-piping is obligatory:

(i) *Wem₁ häsch   geschter mit __₁ gredt?   (ii) [Mit wem]₁   häsch   geschter __₁ gredt?
     who   have.2s yesterday with   talked   with who.DAT have.2s yesterday   talked
     'Who did you talk to yesterday?'   'Who did you talk to yesterday?'

Not even R-pronouns allow stranding. Instead, the R-pronoun is doubled in the base-position (cf. Fleischer 2002 for preposition stranding and related constructions in varieties of German):

(iii) Daa   han i nüüt   ***(de)**voo verschtande.
      there have I nothing there.of   understood
      'I didn't understand anything of it.'

b. de Sportler, wo < d   Biografie über ***(in)** > vil   Erfolg   ghaa hät
   the athlete   C   the biography about him   much success had   has
   'the athlete such that the biography about him had a lot of success'   (subject island)

c. de Autor, wo d   Marie < jedes Buech, won ***(er)** schriibt >,   chaufft
   the author C   the Mary   every book C   he   writes   buys
   'the author such that Mary buys every book he writes'   (CNPC)

d. de Sänger, won i mi fröi,   < wänn mer ***(en)** im Fernseh bringt>
   the singer C   I me be.happy when one   him   on TV   brings
   'the singer such that I am happy when they show him on TV'   (adjunct island)

Importantly, such structures do not have a repair flavor and therefore should not be equated with intrusive pronouns in English, cf. Chao & Sells (1983). Corresponding wh-extractions are strongly ungrammatical (and would not improve with resumptives), cf. Salzmann (2006b: 331):

(3) a. *[Vo wem]₁   bisch < mit de Schwöschter ___₁ > i   d   Schuel?
       of who.DAT are   with the sister   in the school
       lit.: 'Who did you go with the sister of to school?'   (PP-island)

   b. *[Über wele Sportler]₁ hät < d   Biografie ___₁ > vil   Erfolg   ghaa?
       about which athlete   has   the biography   much success has
       lit.: 'Which athlete did the biography about have a lot of success?'   (subject island)

   c. *[Wele   Autor]₁ chaufft d   Marie < jedes Buech, wo ___₁ schriibt >?
       which   author buys   the Mary   every book C   writes
       lit.: 'Which author does Mary buy every book that writes?'   (CNPC)

   d. *[Wele Sänger]₁ fröisch   di, < wänn mer ___₁ im Fernseh bring>?
       which singer   be.happy.2s   you   when one   on TV   brings
       lit.: 'Which singer are you happy when they show on TV?'   (adjunct island)

Resumption is generally impossible in wh-movement and topicalization in ZG, at least in local dependencies. The following pair illustrates extraction of a dative object (Salzmann 2006b: 376f.):[5]

(4) a. [Welem   Maa]₁ häsch ___₁/***em**   es Buech ggëë?
       which.DAT man   have.2s   he.DAT a book   given?
       'To which man did you give a book?'

   b. [Dem   Bueb]₁ han i ___₁/***em**   es Buech ggëë.
       that.DAT boy   have I   he.DAT a book   given
       'To that boy I gave a book.'

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[5]   In long-distance movement, PPs and indirect objects leave gaps while with subjects and direct objects there is some variation, cf. Weber (1965: 304). The latter may, however, be an instance of the so-called A'-splits discussed in Salzmann (2006b: 376: fn. 297) and Salzmann (to appear b). For an explanation why wh-movement (and topicalization) are incompatible with resumption see Salzmann (to appear b: section 4) and section 6.3 below.

2   Explaining the distribution of resumptives in ZG relatives

The distribution of resumptive pronouns in ZG seems quite straightforward, at least on the surface. One the one hand, resumptives occur to prevent violations of locality, cf. (2). Why precisely resumptives amnesty locality violations is far from trivial and will be discussed in section three below, but since this is a frequent property of resumptives cross-linguistically, I will leave it at that for the moment.

   This solution cannot be extended to indirect objects, though, because they do not represent an intransparent domain. As shown in (4), dative objects can be easily extracted. Instead, the occurrence of dative resumptives can be traced back to a language-internal constraint that requires the overt realization of oblique case: the case system of ZG is reduced compared to the Standard German one. The genitive has been lost and nominative and accusative have fallen together (being distinct only in the personal pronoun paradigm). As a consequence, we obtain a system that distinguishes direct and oblique, the dative being the only morphologically oblique case.

   Bayer at al. (2001) have shown that the direct-oblique distinction plays an important role in the grammar of German and its dialects: like genitives, datives are subject to special morphological licensing conditions. Bayer et al. (2001) discuss a number of contexts two of which we will repeat here (see Salzmann 2006b: 374ff. for more empirical evidence).[6] First, complement clauses in German cannot directly fill the slot of a dative argument:

(5) a. Wir   bestritten, (die   Behauptung) [dass wir verreisen   wollten].
       we   denied   the.**ACC** claim   that we   travel.away wanted
       'We denied (the claim) that we wanted to go away.'

   b. Wir   widersprachen * (der   Behauptung), [dass wir verreisen   wollten].
      we   objected   the.**DAT** claim   that we   travel.away wanted
      'We rejected the allegation that we wanted to go away.'   (Bayer et al. 2001: 471)

Since CPs cannot realize morphological case in German, a DP has to be inserted to rescue (5b). The non-oblique cases nominative and accusative do not require this extra licensing, inserting a DP is optional, cf. (5a). Second, Topic Drop is only possible with nominatives and accusatives, but not with datives, cf. Bayer et al. (2001: 489):

(6) a. [$_{acc}$] hab' ich schon   gesehen.   b. *[$_{dat}$] würde ich nicht vertrauen.
        have I   already   seen   would I   not   trust
        'I have already seen (it).'   'I wouldn't trust (him).'

All these facts hold for Zurich German as well and other German and Swiss German dialects in general. Consequently, the fact that the dative also stands out in ZG relativization does not come as a surprise, dative resumptives are simply another reflex of the constraint that requires oblique morphological case to be visible.[7]

   Resumptives thus act as a last resort in Zurich German, occurring only when gap-derivations fail. Since subjects and direct objects are expressed by non-oblique cases, they don't have to be expressed overtly; resumptives are therefore not necessary for subjects and direct objects.

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[6]   Matching effects in ZG dative relatives provide additional evidence, cf. Salzmann (2006a/b, to appear a: section 5.4).

[7]   There are alternative possibilities to motivate dative resumptives. Some explanations (Boeckx 2003, Bianchi 2004) have linked their occurrence to inherent case. Van Riemsdijk (1989) has argued that datives are in fact PPs so that dropping the resumptive would violate recoverability. See Salzmann (2006b/to appear a: section 4.1.2./4.1.3) and Salzmann & Seiler (in prep.) for clear evidence that an explanation in terms of the morphological notion "oblique case" is superior.

Next to the asymmetry subject/direct object vs. the other positions there is a similar contrast when non-individual-denoting types are relativized. In the following pair a predicate is relativized on, in one case originating in a transparent position, in the second case within a PP (i.e. within an island). While resumption is impossible in the first case, it is obligatory in the second (cf. also Salzmann 2006b):[8]

(7) a. Er isch de   gliich Idiot, wo   scho   sin Vatter **(*das)** gsii   isch.
     he   is   the   same   idiot   C   already   his father   that   been   is
     'He is the same idiot his father already was.'

   b. Isch de Hans   würkli de Trottel, won en   all *(de)füür   haltet?
      is   the John   really the idiot   C   him all there.for hold
      'Is John really the idiot everyone regards him as?'

Again, resumption only occurs when necessary; in (7b) a resumptive occurs to prevent a violation of locality, but nothing in (7a) requires a resumptive. While this is easily stated in prose, this statement actually has far-reaching implications: since there is a mechanism that can produce resumptive structures and since no obvious principle of grammar prevents resumptives for subjects/direct objects (and examples like (7a)), we must assume that resumptive structures converge for these relations as well.[9] But since only gap derivations are grammatical in these environments, we can follow that they block resumptive derivations. Gap derivations thus count as more economical, and one of the central questions to be answered is thus why this should be the case.

At the same time since there is competition between gap and resumptive relatives, we must assume that they both belong to the same reference set, i.e. the set of converging derivations that compete with each other. This will have important implications for the definition of the reference set. The most widely held assumption concerning the definition of the reference set is that it is based on identical numerations, i.e. two derivations compete if they are made up of the same set of lexical items. In the following section, I will discuss various approaches to resumption in Zurich German. The focus will be on the assumptions that are necessary to allow competition between gap and resumptive relatives under this particular definition of the reference set and to explain why gap relatives are preferred over resumptive relatives for subjects/direct objects.

3 Is the reference set based on identical numerations?

3.1 Movement accounts of resumption

There are basically three different movement approaches to resumption that I will discuss in turn. The first type analyzes the resumptive as the spell-out of a trace, the second one treats it as the head of a big-DP, and the third one treats it as an operator in-situ that moves at LF.

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[8] In the b-example the resumptive is an R-pronoun, the pronominal part of a pronominal adverb. Pronominal adverbs occur if prepositions take an inanimate pronominal complement (cf. Salzmann 2006b for a more careful statement). Consequently, *de-* appears instead of *das*.

[9] There is a line of research that argues that resumptives are barred from certain positions such as matrix subject/direct object due to A'-disjointness, i.e. bound pronouns must be free in a certain domain. This means that resumptive derivations are taken to crash contrary to what is claimed here, cf. Willis (2000: 545ff.) for discussion on Welsh and Irish. For Zurich German such a solution is inadequate because of the resumptives for indirect objects: since indirect objects (which can be shown to be DPs) do not differ with respect to the least Complete Functional Complex from direct objects (in both cases, it is the TP), the asymmetry cannot be derived by means of A'-disjointness.

3.1.1 Spell-out: Pesetsky (1998), Bianchi (2004), Alexopoulou (2006)

These approaches are based on the assumption that the resumptive is the phonetic realization of a trace. The resumptive is thus added/inserted at the end of the derivation/at PF, it is not part of the numeration.[10] Given this assumption, competition between gap and resumptive relatives for subjects and direct objects is in fact expected since they do not differ in the numeration. There are a number of constraints in the literature that can be used to prefer gaps over resumptives under such an analysis, most of them are based on representational economy.

Pesetsky (1998), working within Optimality Theory, proposes SILENTTRACE, a translocal PF-constraint that compares PF-representations. It selects the representation as optimal/grammatical which does not have overt/realized traces, i.e. the gap derivation.

Another possibility is to extend the Avoid Pronoun Principle (APP) to A'-dependencies. In its original form, the APP is a translocal representational constraint that prefers silent over overt pronouns (if both are possible), as in the following Control construction:

(8)   John$_1$ preferred [PRO$_1$/his$_{*1/2}$ going to the movies].

If the pronoun is overt it has to be disjoint. Only the silent pronoun is possible under coreference with the matrix subject. Preferring silent over overt pronouns is then extended to resumption, with basically the same interpretation as SILENTTRACE, cf. Chomsky (1982: 63f.), Heck & Müller (2000: 44), and probably also Müller & Sternefeld (2001: 60). Obviously, unless one adopts the movement approach to Control, the parallelism is not perfect in that we are dealing with a base-generated antecedent-pronoun dependency in Control, but with an operator-trace/variable dependency in A'-movement – a trace is not really a pronoun and therefore not affected under a strict interpretation of the APP.

Another possibility, implementable only within Optimality Theory, is to use a constraint of the Dependency family like FILL from Légendre et al. (1998), which generally prevents epenthesis. If resumption is viewed as some form of epenthesis (which is the case under spell-out approaches to resumption), it will be blocked by a converging gap derivation as the latter does not violate FILL.

Finally, it would in principle be possible to use a transderivational constraint like Fewest Steps to block resumptives for subjects/direct objects. Since resumption involves an additional operation (the phonetic realization of the trace) it is blocked by the gap derivation.[11]

3.1.2 Big-DP-approaches (e.g. Boeckx 2003)

If a Big-DP approach is adopted, things are somewhat different. Big-DP approaches assimilate resumption to clitic doubling and assume that antecedent and resumptive start out as one constituent, the resumptive being the head of the DP. The antecedent/operator then subextracts and moves to some operator position (in Boeckx 2003 the operator is taken to be an NP that is generated as the complement of D, but in principle it would also be possible to posit a DP and base-generate it in Spec, DP):

(9)   [$_{CP}$Op C [$_{DP}$ ~~Op~~ [D' **res** ~~Op~~]]]

This implies that the resumptive will be part of the numeration. For gap relatives to be able to block resumptive relatives for subjects/direct objects, they must be based on a resumptive

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[10]   There is to my knowledge no coherent theory that would predict what kind of elements can be inserted during the derivation. *Do* in *do*-support is certainly such a case, and probably also certain complementizers, cf. Sternefeld (1997: 103).

[11]   This is arguably the assumption in Hornstein (2000: 178) where the resumptive derivation piggybacks on the movement derivation. See also fn. 14.

derivation and then involve phonetic deletion of the resumptive. Otherwise, gap and resumptive relatives have different numerations, do not belong to the same reference set and therefore do not compete. Again the question arises why gap derivations block resumptive derivations.

Of course, the representational economy constraints SILENTTRACE and APP from above can be adduced. In the case of SILENTTRACE it is far from clear whether this would actually work since the resumptive is not a trace and not directly part of an A'-dependency. The APP, on the other hand, would work quite well, in fact better than under a spell-out approach since under a big-DP approach we are dealing with a proper pronoun, and not with a trace.

But even if the APP would work to block resumptive derivations, it needs to be pointed out that the gap-derivation is arguably more complex in that it involves an additional deletion operation. Nunes (2004) has convincingly shown that deletion operations are relevant for economy computation. But in the case at hand, we must assume that either the deletion operation does not count or is less important than the APP. In other words, derivational economy would be less important than representational economy. This seems to suggest that the two types of economy are somehow ranked. This, however, is generally taken to be impossible in Minimalist syntax, cf. Müller & Sternefeld (2001). In fact the standard assumption seems to be that there is no grammatical result when economy constraints are in conflict, cf. Sternefeld (1997: 82). It seems fair to conclude then that the competition between gap and resumptive relatives is not as straightforward under a Big-DP approach as under a spell-out approach.[12]

3.1.3 The resumptive as an operator in-situ (Demirdache 1991)

Demirdache (1991) proposes that resumptives are operators in-situ, i.e. operators that move at LF. For gap and resumptive derivations to compete one again has to assume that the gap-derivation is based on a resumptive derivation and involves an additional deletion operation. With respect to favoring gap over resumptive relatives, the possibilities are the same as in the previous subsection and will therefore not be discussed again.

3.2 Against movement-based accounts of resumption

While it is possible to have competition between gap and resumptive relatives under movement-based approaches, there are a good reasons to reject movement approaches to resumption in Zurich German relatives, mostly because resumption is insensitive to locality. Before presenting the relevant arguments, it is important to point out that many of them do not apply to a number of languages where resumption is sensitive to locality, cf. Boeckx (2003: 108ff.) on Swedish and Vata, Goodluck & Stojanovic (1996) on Serbo-Croatian, Georgopoulos (1991) on Palauan, Rouveret (2008: 179) on Welsh, and Alexopoulou (2006) on Greek restrictive relatives. Here is an example from Greek (Alexopoulou 2006: 85):

(10) * to pedi pu xerume < ton   tipo pu **(to)** emplexe me tis palioparees >
         the kid C know.1p the.ACC guy C it   involved with the dodgy_friendships
         'the kid who we know the guy that got him into dodgy friendships'

For such languages a movement analysis may be the best solution.[13]

3.2.1 Locality: why should the resumptive alleviate violations of locality?

The major argument against movement approaches comes from locality (cf. McCloskey 2002). As shown in (2) above, resumptive relatives in ZG are completely insensitive to

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[12] Additional difficulties arise with the assumption that gap derivations are based on resumptive derivations, cf. 3.3.2 below.

[13] Or at least an analysis that is based on Agree, cf. Adger & Ramchand (2005), Rouveret (2008).

locality while the corresponding wh-extractions are ungrammatical. This implies that resumptives somehow amnesty locality violations. The question is, of course, why. As I will show below, none of the answers provided by movement approaches is entirely convincing.

3.2.1.1 LF-movement (Demirdache 1991)

Demirdache (1991) claims that resumptive pronouns are operators in-situ that undergo movement at LF. This is supposed to explain the insensitivity to locality under the assumption that LF-movement is less restricted than overt movement. However, even though LF-movement is indeed generally assumed to be subject to less strict locality constraints than overt movement, it is still usually taken to be sensitive to adjunct islands (cf. Aoun & Li 1993). As a consequence, sentences like (2c/d) should be ungrammatical, contrary to fact. Consequently, Demirdache's (1991) approach cannot be correct for resumption in Zurich German relatives.

3.2.1.2 Big-DP and movement without Agree (Boeckx 2003)

Boeckx (2003) has developed a very elaborate approach to resumption a full discussion of which is beyond the scope of this paper (but see Salzmann 2006b: 285ff., 292ff. and Bianchi 2008). For present purposes it suffices to evaluate his explanation for why movement out of islands is possible under resumption: according to him (2003: 97ff.) movement is in principle unbounded and there is nothing inherently wrong about extracting from an island.
   However, the Agree operation that normally takes place between a Probe and a Goal is sensitive to locality. Locality constraints can be avoided exactly in those cases where movement is possible without Agree (Boeckx 2003: 109ff.). Movement without Agree is possible if the phi-features of the Goal are not activated. This, Boeckx argues, is the case if some other element checks the phi-/case-features of v or T. Resumption is such a configuration: assuming a Big-DP headed by the resumptive with the operator as its complement, it is the entire Big-DP that checks/values the case- and phi-features of v/T. The operator, however, can be attracted by the C-probe under Match:

(11)   C ... [$_{\text{ISLAND}}$ v [$_{\text{DP}}$ D$_{\text{RP}}$ [Op]]   ]

the Big-DP checks case-/phi-features on v
C attracts operator under pure Match

Importantly, movement under Match is only possible if the C-Probe is of a particular type, namely of the so-called non-agreeing type, i.e. a C-probe that can probe without Agree.
   While Boeckx (2003) must be given credit for attempting to reconcile movement out of islands with our assumptions about locality, there are a number of problems with his reasoning: first, the theory is to a large extent tailored around the facts; many assumptions are not independently motivated such as movement without Agree and especially the classification of C-probes into agreeing and non-agreeing complementizers: non-agreeing will always be those that co-occur with resumptives and are insensitive to islands while agreeing ones will be only compatible with gaps (and will be sensitive to locality, as e.g. Standard German). But if the facts one is trying to explain are the only diagnostics to determine the type of probe, the analysis becomes descriptive. Secondly, postulating a Big-DP is unattractive in a language like ZG which does not otherwise make use of such a structure. Given these difficulties I refrain from endorsing Boeckx' system.

3.2.1.3 The importance of overtness (Pesetsky 1998, Belletti 2006)

Pesetsky (1998: 365) proposes a PF-theory of locality: locality is not a constraint on movement as such but rather restricts the distribution of traces. Adapting an idea from Perlmutter (1972), he proposes that locality prohibits chains with unrealized bottom copies inside islands. In his OT-account this is formulated as a constraint: *β [$_{\text{island}}$ β]. Belletti (2006), who adopts a clitic-doubling approach, also takes overtness of the resumptive to be

the relevant factor that voids locality violations.[14] There are two major difficulties with this type of approach: first, the claim that it is the overtness of the trace that is relevant for locality is basically a stipulation and does not follow from anything. There is essentially no independent evidence for this claim. Secondly, perhaps even more problematic is the fact that many languages have silent resumptives inside islands (cf. e.g. McCloskey 1990 on Irish, Georgopoulos 1985/1991 on Palauan or Willis 2000 on Welsh). Here is one example from Irish possessor relativization (possessors are intransparent domains in Irish), cf. McCloskey (1990: 207):

(12)　an　　bhean　a raibh [_DP a　　　mac ***pro***]　breoite
　　　　the　　woman　C was　　　3SG.FEM son　　　　　ill
　　　　'the woman whose son was ill'

The same can be observed in ZG where one finds silent resumptives in two instances: first, as in Irish, possessor relatives in ZG feature a silent *pro* in Spec, DP, licensed by the agreement on the possessive pronoun (cf. Salzmann, to appear b for evidence):

(13)　Das　isch　de　Schüeler, won　i　geschter [_DP ***pro*** sin　Vatter]　käne gleert han.
　　　　that　is　　the　student　　C　　I　yesterday　　　　his　father　　got.to.know have
　　　　'This is the student whose father I met yesterday.'

Secondly, when the subject is 2nd person singular it can be zero (perhaps because 2nd person singular is expressed very clearly by verb morphology). In V-final sentences (including relative clauses) the complementizer additionally takes an agreement marker, arguably because 2nd person singular must be realized on C. I will assume that a *pro* is licensed whenever the verb is 2nd person singular. An overt subject pronoun can be optionally used as well, e.g. for emphasis:[15]

(14)　…　wo-t　　　　em　　***pro*/du**　das　gsäit　häsch
　　　　　　when-AGR　he.DAT　pro/you　that　said　　have.2s
　　　　　　'when you said this to him'

Crucially, when a second person singular is relativized, a *pro* is sufficient even if the variable is inside an island (admittedly, relativizing pronouns is generally awkward):

(15)　du, won i glaube, dass es < niemert git, wo-t　em　　***pro*** würsch　hälffe>
　　　　you　C　I believe　that it　　no.one　is　C-AGR　he.DAT　　would.2s　help
　　　　'you, such that I believe that there is no one that you would help'

These facts clearly show that the island-saving nature of resumption cannot be attributed to overtness.[16]

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[14]　Hornstein (2000: 178) proposes something similar: he allows the creation of movement dependencies across islands and takes locality constraints to be bare output conditions, i.e. PF-filters. Chains across islands are thus ill-formed chains. He then assumes that a pronoun can cover a copy (formally by first deleting the copy) thereby repairing the chain. Again, overtness seems to be crucial even though Hornstein does not explain why.

[15]　The co-occurrence of the agreement marker *-t* on C together with the overt subject pronoun *du* shows that *-t* cannot be analyzed as a regular subject pronoun.

[16]　General arguments against spell-out approaches can be found in Asudeh (in prep.).

3.2.2 The shape of the resuming element

While I believe that the locality argument is strong enough to reject movement approaches to resumption for ZG, let me briefly present one more argument against movement approaches, namely the shape of the resuming element. While weak or zero pronouns are the normal case in ZG resumption, other elements are also possible under certain conditions, namely strong pronouns and epithets (Salzmann 2006b). Here is an example with an epithet inside an island:

(16) de Maa, won i < niemert känne, wo **dem   Trottel** glaubt >
      the man C   I no.one   know C the.DAT idiot   believes
      'the man such that I don't know anyone who believes that idiot'

Epithets are problematic for all movement accounts: they are most likely not operators in-situ, they are also unlikely to be spell-outs of traces as they have lexical content different from that of the antecedent. Finally, it is also not immediately transparent how they would be handled in a Big-DP approach. Aoun et al. (2001) treat them as appositions (i.e. as being adjoined) to the constituent to be extracted; while this may be semantically sound, one then looses Boeckx' (2003) explanation for the insensitivity to islands.[17]

3.2.3 Reconstruction and Strong Crossover effects as movement effects?

One issue that has figured relatively prominently in the debate on resumption in recent years is reconstruction. While the literature up to the 1990ies took base-generation for granted and consequently did not even address reconstruction, more recent contributions have shown that resumption is compatible with reconstruction: Aoun et al. (2001) on Lebanese Arabic, Bianchi (2004/2008) on Romance, Belletti (2006) on Italian, Guilliot (2006) on Breton, Guilliot & Malkawi (2006) on Jordanian Arabic, Guilliot (2007) on French, Boeckx & Hornstein (2008) on Lebanese Arabic, and Rouveret (2008) on Welsh have all documented that resumption allows at least some reconstruction effects, especially reconstruction for anaphor binding and variable binding.

   Aoun et al. (2001) and Boeckx & Hornstein (2008) have argued that reconstruction effects with resumption require more care. They show that in Lebanese Arabic, the possibility of reconstruction in resumptive constructions correlates with locality: if the resumptive is in a position from where extraction is in principle possible – e.g. indirect objects – reconstruction is possible, while in cases where the resumptive is inside an island there is no reconstruction. Resumption is called 'apparent' in the first case and 'true' in the latter.[18] Such a state of affairs argues for a movement analysis in the first case and a base-generation analysis in the second.

   However, reconstruction effects do not always pattern with locality. Guilliot & Malkawi (2006) and Guilliot (2007) have shown that reconstruction into islands is possible in Jordanian Arabic and French, respectively. At least for such languages, reconstruction cannot serve as a straightforward movement diagnostic as long as the insensitivity to islands remains unexplained.

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[17] Another possible argument against movement analyses of resumption comes from the absence of cyclicity effects. In languages like Irish, only intermediate complementizers of gap-derivations show a special form while resumptive relatives just use the declarative complementizer (McCloskey 2002). This suggests successive-cyclic movement for gap-relatives, but not for resumptive relatives (however, Palauan does seem to show wh-agreement under resumption, cf. Georgopoulos 1985/1991). A similar absence of cyclicity effects is found with respect to reconstruction in Welsh, cf. footnote 25.

[18] This distinction is, of course, only relevant in languages where resumption is not sensitive to locality. Bianchi (2004) proposes a similar dichotomy. She adopts a movement analysis for resumptives in oblique relations (oblique cases, possessors and complements of prepositions) and a base-generation analysis in case the resumptive is inside an island.

The same holds for Zurich German. Reconstruction obtains in gap relatives and in all resumptive relatives, irrespective of the position of the resumptive. The following pairs illustrate reconstruction into a transparent domain (a direct object/indirect object; the external head is enclosed in brackets, the reconstruction site is indicated by means of underline; for more data cf. Salzmann 2006b):

(17) a. Ich wett s [Fotti vo **sinen**$_i$ Eltere] gsee,
    I want the picture of his parents see

  wo **jede Schüeler**$_i$ __ am beschte findt.
  C every pupil   the best likes

  'I would like to see the picture of his$_i$ parents that every pupil$_i$ likes best.'   DO

 b. s [Grücht über **siich**$_i$], wo **de Peter**$_i$ __ nöd chan ignoriere
  the rumor about self   C the Peter   not can ignore
  'the rumor about himself$_i$ that Peter$_i$ cannot ignore'   DO

(18) a. de [Pricht über **sini**$_i$ Frau],
  the story about his wife

  won **em** **kän Politiker**$_i$ __ würd Glaube schänke
  C he.DAT no politician   would believe give

  'the story about his$_i$ wife that no politician$_i$ would believe'   IO

 b. s [Buech über **siich**$_i$],
  the book about self

  won **em** de **Peter**$_i$ __ jede Wert abgsproche hät
  C he.DAT the Peter   every value denied has

  'the book about himself$_i$ that Peter$_i$ denied any value'   IO

Reconstruction into intransparent domains is illustrated by the following examples where the resumptive is located inside a plain PP, inside a PP which is embedded within another PP, and inside a noun complement clause:

(19) a. D [Ziit vo **sim**$_i$ Läbe], wo **niemert**$_i$ gern <u>drüber</u> redt, isch d Pubertät.
  the time of his life C nobody likes.to there.about talks is the puberty
  'The time of his$_i$ life that nobody$_i$ likes to talk about is puberty.'

 b. s [Fotti vo **sinere**$_i$ Frau], wo **kän Politiker**$_i$
  the picture of his wife C no politician

  < mit em Gschwätz <u>drüber</u> > glücklich isch
  with the gossip there.about happy is

  lit.: 'the picture of his$_i$ wife that no politician$_i$ is happy about the gossip about'

 c. de Abschnitt vo **sim**$_i$ Läbe], won i < d Behauptig,
  the period of his life C I the claim

  dass **jede Politiker**$_i$ stolz <u>druf</u> isch > nöd cha glaube
  that every politician proud there.on is not can.1SG believe

lit.: 'the period of his$_i$ life that I cannot believe the claim that every politician$_i$ is proud of'

The same can be observed for Strong Crossover effects. While they are usually taken to be movement diagnostics, they have also been documented under resumption, cf. McCloskey (1990: 211f.) for Irish and Shlonsky (1992: 46) for Hebrew. They also obtain in ZG gap and resumptive relatives, again irrespective of the position of the resumptive (see Salzmann 2006b: 346ff. for more discussion of Strong Crossover):

(20) * de   [Maa]$_i$, won **er**$_i$ ___ $_i$ gern hät
         the   man   C   he   likes
         lit.: 'the man$_i$ who$_i$ he$_i$ likes'

(21) a.* de   [Bueb]$_i$, won **er**$_i$ mit   emene Fründ vo <u>im</u>$_i$ 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 [Maa]$_i$, won **er**$_i$ d   Frau,   won <u>en</u>$_i$ geschter verlaa hät, vertüüflet
         the man   C   he   the woman C   him yesterday left   has   condemns
         lit.: 'the man$_i$ who$_i$ he$_i$ condemns the woman that left'

Obviously, the classical movement effects reconstruction and Strong Crossover neither pattern with the gap/resumptive dichotomy nor with locality. One might want to follow from this that movement is involved in all cases, but since there is to date no plausible explanation for why resumption can void locality constraints, this would be premature.

   Furthermore, there is independent evidence that reconstruction cannot be fully correlated with movement. While it is indeed standardly assumed that reconstruction implies a movement relationship (and comes about via interpretation of the lower copy of a movement chain), there are a number of phenomena that show that this is not always correct.

   Reconstruction is also found in constructions without a direct movement relationship between the reconstructee and the reconstruction site. This holds e.g. generally for relative clauses (unless a Raising analysis is adopted) and pseudoclefts (den Dikken et al. 2000: 42):

(22)   What **nobody**$_i$ bought was a picture of **his**$_i$ house.

Nobody and the bound pronoun *his* are not part of the same clause and there is no obvious movement relationship that could reconstruct *nobody* into the same clause as *his* (see den Dikken 2006: section 6 for an overview over possible analyses). Furthermore, certain instances of scope reconstruction in relative clauses can explained without the interpretation of the lower copy of a movement chain, cf. e.g. Sharvit (1999: 588), Cecchetto (2005), Hulsey & Sauerland (2006):

(23)   The woman every man$_i$ loves is his$_i$ mother.

The multiple-individual reading (a different woman for every man) does not necessarily result from interpreting the external head of the relative inside the relative clause since the QP binds a pronoun in the matrix clause. Obviously, some mechanism is available for the QP to get scope over the bound pronoun in the matrix clause (this could be QR of the QP, cf. Hulsey & Sauerland 2006 or an analysis in terms of indirect binding, cf. Sharvit 1999, Cecchetto 2005). These mechanisms are also sufficient for the universal to gain wide scope with respect to the external ahead. But once such mechanisms are necessary anyway and thus

in principle available, modeling reconstruction effects by means of the copy theory of movement is no longer necessary.[19]

Mechanisms other than the interpretation of the lower copy of a movement chain are thus necessary anyway to account for certain binding facts. One can therefore conclude that the presence of reconstruction (and Strong Crossover) effects in ZG resumptive relatives is not a movement diagnostic. In 3.4.2 below I will discuss how reconstruction can be handled under base-generation.

3.3 Base-generation accounts of resumption

I consider the arguments of the previous subsection strong enough to discard movement approaches to resumption altogether. As a consequence, I take resumption in ZG to involve base-generation. Before presenting my own implementation I will discuss two other base-generation approaches and will focus on the assumptions that are necessary to be able to base the reference set on identical numerations.

3.3.1 The resumptive is added during the derivation (Aoun et al. 2001)

Aoun et al. (2001) propose a derivational implementation of base-generation whereby the resumptive is added during the derivation. Gap and resumptive relatives are thus based on the same numeration and compete if they converge. The derivation proceeds as follows: first an operator is merged in the thematic position. When it is attracted by a C it will attempt to move to the specifier of that head. If there is no island, the operator will do so, the result being a gap/movement derivation. If, however, the operator is inside an island, it cannot move out. Then, Aoun et al. (2001) argue, an operation termed *Bind* applies: the operator is demerged from the phrase marker and remerged in the operator position, and a resumptive pronoun is substituted for the demerged expression in the thematic position. Importantly, both derivations can in principle apply when the operator is in a transparent domain (e.g. subject/direct object). However, the base-generation derivation is regarded as less economical because it involves more operations than the movement derivation (additionally, the pronominalization operation is interpreted as a violation of representational economy, cf. Aoun et al. 2001: 398):

(24) a. movement: Copy + Merge

     b. base-generation: Demerge (Copy + Delete) + Merge + Pronominalize

We are thus dealing with a transderivational economy constraint (perhaps subsumable under Fewest Steps) that blocks base-generation if there is a converging movement derivation. In the case of datives and intransparent domains in ZG relatives, the movement derivation fails so that the converging derivation involving Bind – even though it is less economical – results as the only grammatical possibility.

There are a number of problems with this approach if applied to ZG: first, adopting a transderivational economy constraint goes against the trend of the last decade to do away with such constraints, cf. Müller & Sternefeld (2001).

Second, the resumptive always appears more or less (i.e. modulo pronoun fronting) in the thematic position. But in case the operator first undergoes A'-movement before it encounters an island, one would expect the resumptive in higher positions, contrary to fact:

(25) * [$_{CP}$ C$_{+wh}$ [$_{ISLAND}$ [$_{CP}$ Op$_i$ [$_{CP}$ ~~Op$_i$~~ ... ~~Op$_i$~~]]]].
                                       ⇓
                                  res

---

[19]   See also Cecchetto (2005) for convincing arguments that reconstruction in relative clauses should generally not be accounted for in terms of the copy theory of movement.

Here the operator has first moved to Spec, CP of the lowest clause, then to an intermediate Spec, CP. Then, when it attempts to move to the matrix Spec, CP, it encounters an island. As a consequence, this is where the operator would have to be replaced by a resumptive. But resumptives normally do not occur in intermediate positions. They certainly do not in ZG, but this fact holds more generally, perhaps with the exception of Hebrew (cf. e.g. Demirdache 1991).[20]

Third, it is rather unclear to me how such an approach could be implemented in the more recent versions of the Minimalist Program of strongly-derivational character, e.g. Chomsky (2001): in such approaches, the ultimate C-probe often will not have been merged when the operator, i.e. the goal, would have to be de-merged. De-merging would have to apply preemptively (a form of look-ahead), and it is unclear what one would do with the copy resulting from it. It would have to be kept in storage somewhere until the relevant probe is merged, but how this should be done is by no means obvious (cf. Heck & Müller 2000: 35 for similar discussion).

Fourth, the shape of the pronoun that is substituted for the demerged operator phrase depends on the syntactic context: with possessors it is a null resumptive (13), in most other cases it is a weak overt pronoun and after the comparative particle it is a strong pronoun, cf. (39) below. It is questionable whether this could be taken care of by the pronominalization rule involved in Bind. It is not per se impossible, but such an operation would be undesirably powerful.[21]

Fifth, all overt resumptives that are not governed by prepositions undergo weak pronoun fronting in ZG. It is unclear how such a movement should be possible given Aoun et al.'s assumptions: at the point where the pronoun is substituted, the derivation has already proceeded too far for pronoun fronting to apply, in fact the operator has been remerged in the final landing site so that the derivation is basically finished. Subsequent pronoun fronting targeting a position inside the lowest CP would then be ruled out by Cyclicity. Furthermore, if pronoun fronting is triggered by a syntactic feature, it is unclear how the pronoun that is substituted during the derivation could have such a feature.[22]

It is safe to conclude then that there are good reasons to reject Aoun et al's (2001) approach.

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[20] Perhaps the remerger theory of movement would help, cf. the discussion in Aoun et al. (2001: 399, fn. 31). Alternatively, one could argue that a derivation as in (25) is possible but generally blocked by a base-generation derivation that substitutes the pronoun at the very beginning. The latter derivation would arguably be more economical as it would involve fewer movement steps. This means that for the transderivational constraint to work, we would need another one. This is certainly not a very satisfactory solution. And since successive-cyclic *wh*-movement is often analyzed as counting just as one operation (one instance of Form Chain, cf. Müller & Sternefeld 2001: 12), not even this may work to rule out (25).

[21] To be fair, Aoun et al. (2001: 396) actually implement the pronominalization operation in a somewhat different and rather perplexing way: the pronoun that is substituted is not the resumptive that can be seen on the surface but rather an additional empty resumptive pronoun. This is arguably necessary within their approach because Lebanese Arabic also features strong pronouns and epithets as resumptives, which cannot so easily be analyzed as the pronominalization of a DP. Furthermore, due to their distinction between true and apparent resumption (cf. 3.2.3), an overt resumptive is never indicative of base-generation so that an additional empty one has to be assumed for base-generation. I find this rather unattractive and certainly unnecessary for the ZG facts.
    Alternatively, one could argue that what is substituted are just pronominal features. The exact shape of the pronoun would then be determined postsyntactically on the basis of the syntactic context – basically as in spell-out approaches to movement.

[22] The only way out, it seems, is to assume that pronoun fronting takes place in the PF-branch, cf. Salzmann (2006b: 304) for discussion. Given the discussion in the previous footnote, pronoun fronting would have to take place after vocabulary insertion, i.e. after the abstract pronominal features are replaced by a weak pronoun. This is arguably not innocuous.

3.3.2 The resumptive is part of the numeration (Van Riemsdijk 1989)

Van Riemsdijk (1989) proposes a base-generation approach to resumption in Zurich German. He assumes that both gap and resumptive relatives are based on resumptive derivations; they are thus based on identical numerations. He assumes that the resumptives that are not governed by prepositions move to C to get deleted. The gap-relatives for subjects and direct objects thus involve deletion of the resumptive. Apparently, this deletion is obligatory. Van Riemsdijk (1989) appeals to the Avoid Pronoun Principle which favors gaps over resumptives. As pointed out in 3.1.2 above, this reasoning is not without problems as gap relatives involve an additional deletion operation that may be costly. This suggests again that representational economy is implicitly taken to be more important than derivational economy.

Quite apart from such difficulties, there is strong evidence that gap relatives are not based on resumptive relatives (cf. Salzmann, to appear a: section 4.2.1): first, there are scope asymmetries between gap and resumptive relatives: gap relatives allow scope reconstruction while resumptive relatives do not. This is completely unexpected if the difference between gap and resumptive relatives is just a matter of PF:

(26) a. di   [*zwäi* Mäitli],
         the   two   girls

      won **ene**   *jede Bueb* ___ en Struuss   muess bringe
      C   they.DAT   every boy   a   bunch.of.flowers must   bring

      'the two girls that every boy must bring a bunch of flowers' $2 > \forall$; $*\forall > 2$

   b. di [*zwäi* Mäitli], wo *jede   Bueb* muess ___   sueche
       the two   girls   C   every boy   must   look.for
       'the two girls that every boy must look for' $2 > \forall$; $\forall > 2$

The second problem concerns the relativization of amounts:

(27) di [zwäi Wuche], won er   ___   i   de Ferie   gsii isch
      the two   weeks   C   he   in the vacation   been is
      'the two weeks he was on vacation'

The relativization of non-individual-denoting types such as amounts cannot be based on a resumptive derivation as there is no proper weak proform that could form the basis. Regular personal pronouns are not compatible with amounts, there is in fact no proper proform at all, the only way of referring to amounts would involve an expression like *so lang* 'this long' as in the following example involving left-dislocation of an amount:

(28) Zwäi Wuche, **so lang/*si** isch er   nie   i   de Ferie   gsii.
      two   weeks   that long/them is   he   never in the vacation   been
      'Two weeks he has never been on vacation.'

Even if something like *so lang* were at the basis of (27) it would still be far from clear how it could get deleted because according to van Riemsdijk the deletion of the resumptive depends on the fronting of the pronoun. While this is unproblematic with the weak personal pronouns that van Riemsdijk posits for the relativization of subjects and direct objects, an expression as complex as *so lang* certainly cannot target the Wackernagel position and thus cannot be deleted according to van Riemsdijk.

I conclude from this that the relativization of subjects, direct objects and non-individual types (in transparent positions) involves movement (cf. also Salzmann, to appear a).[23]

3.4 Consequences

The consequence of the previous subsections is that resumptive relatives in ZG are derived via base-generation and gap relatives via movement. In this subsection I will first propose a different implementation of base-generation. Then I will discuss how movement effects like reconstruction can be handled under resumption. I will then explain the distribution of resumptives based on these assumptions. Finally, I will discuss the implications of my analysis for the definition of the reference set.

3.4.1 Implementation of base-generation

My implementation of base-generation is very simple: as in traditional analyses, an operator is base-generated, i.e. directly merged, in an operator position. The resumptive, i.e. a regular pronoun, is merged in an argument position. Finally, the operator binds the pronoun, creating an operator variable dependency. As a consequence, the operator must be unmarked for case (cf. also Merchant 2004). If it had a case-feature, there would be no way for it to be checked/valued in this configuration. The operator thus only has an [Op]-feature that is checked against the corresponding feature on C.[24] The case-feature on v/T is checked by the resumptive.

In addition to the case-unmarked operator, there also is a (silent) case-marked operator. If that operator is chosen, a movement derivation obtains as it can check both the case-feature of v/T and the operator feature of C. The two derivations schematically look as follows:

(29) a. $[_{CP}$ Op$_i$ C $[_{vP}$ $[_{vP}$ pron$_i$ V] v]]   b. $[_{CP}$ Op C $[_{vP}$ $[_{vP}$ ~~Op~~ V] v]]

    [~~Op~~]   [~~case~~]   [Op/~~case~~]   [Op/~~case~~]

          base-generation   *movement*

3.4.2 Movement effects under resumption

The discussion in 3.2.3 has shown that reconstruction effects do not necessarily imply movement. But how can they be handled under base-generation? To my knowledge, there are basically two types of mechanisms that have been explored to handle movement effects for base-generated dependencies: semantic reconstruction (cf. Sternefeld 2000 for an overview) and the NP-ellipsis analysis of resumptive pronouns (Guilliot & Malkawi 2006, Rouveret 2008). In the latter, the resumptive is reanalyzed as a transitive determiner whose NP-complement has been elided under identity with an antecedent (PF-deletion is henceforth indicated by means of outline): $[_{DP}$ D $\mathbb{NP}]$. This would give the following schematic representation for an example like (19b) (strikethrough indicates LF-deletion; I use English words for ease of presentation):

---

[23] Note that the asymmetries between gap and resumptive relatives discussed in this subsection also argue against an implementation in terms of a Big-DP (3.1.2) or in terms of LF-movement (3.1.3) where the gap derivation is based on a resumptive derivation.

[24] This assumption may be somewhat nonstandard. It is often assumed that uninterpretable/ unvalued features of a probe can only be checked via Internal Merge, cf. McCloskey (2002: 204), Alexopoulou (2006: 80, 88). If one wants to uphold this restriction, one can assume that C does not have an Op-feature, but only an EPP-feature, or even no feature at all. In the last case, External Mrge of the operator would be purely semantically-driven.

(30)   the [picture of his~~i~~ wife]~~j~~ [~CP~[Op [picture of his wife]~j~] that no politician~i~ is happy
        about the gossip about [~DP~ it [picture of his~i~ wife]~j~]

Importantly, this only works in the present context if the Matching Analysis of relative clauses is adopted as e.g. in Salzmann (2006b/to appear b), where the relative operator is just a D-element taking an NP complement which is elided under identity with the external head. Reconstruction effects are thus not per se a problem for a base-generation analysis.

The same holds for SCO effects; they could also be handled by means of the NP-ellipsis theory of resumptives: in an example like (21b), the resumptive *en* 'him' would actually have the structure [~DP~ en 𝕄aa]. At LF this DP would be c-commanded by the coreferential pronoun *he* and a Principle C violation would ensue. More traditional approaches like McCloskey (1990) and Shlonsky (1992) define SCO on the basis of the A'-chain linking the operator with the resumptive pronoun. An SCO effect in (21b) would then be due to the fact that the chain between the base-generated operator and the resumptive crosses a pronoun with the same index (again, I use English words for ease of presentation):

(31)   * the man~i~, **Op~i~** C **he~i~**   condemns the woman who left **him~i~** yesterday

I conclude from this that reconstruction and Strong Crossover effects can be straightforwardly implemented under a base-generation approach to resumption.[25]

3.4.3 The distribution of resumptive pronouns

I have argued above that resumption is a last resort in ZG, occurring only when a gap-derivation fails. This obtains when the extraction site is an indirect object or is located inside an island. In both cases, only the base-generation derivation with resumptives will converge, albeit for different reasons: in the case of the indirect object, a gap derivation will lead to a representation where the oblique case remains unexpressed in violation of the constraint discussed in section 2 above. If the extraction site is within an island, the gap derivation crashes since movement out of islands violates locality. In these configurations there will thus be no competition between movement and base-generation. The derivation of subject and direct object relatives is discussed in the following subsection.

3.4.4 The definition of the reference set: identical LFs

I have proposed that gap relatives involve movement while resumptive relatives involve base-generation. Since no grammatical principle (such as locality) bars base-generation, we can assume that resumptive derivations converge for subjects and direct objects (and non-individual-denoting types as in (7a). At the same time, since resumptive relatives are impossible in these positions, we must assume that they are blocked by movement derivations. This implies that they compete and thus belong to the same reference set. But under which definition of the reference set would they compete? The numeration is certainly not an option because the movement and base-generation derivations proposed here do not

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[25] The test case to tell apart movement and base-generation would involve reconstruction into intermediate positions. Such interpretations cannot be derived by base-generation plus semantic reconstruction or NP ellipsis since the external head is not related to such positions under base-generation. Under successive-cyclic movement, on the other hand, such interpretations are expected to obtain. I discussed a number of cases in Salzmann (2006b: 341–345), but the result is not clear enough to derive any conclusions from it. The problem is more general in that reconstruction into intermediate positions is generally degraded in German and its varieties, cf. Salzmann (2006b: 92ff.). For resumption in other languages it has been claimed that cyclicity effects disappear, i.e. reconstruction is always to the tail of the A'-dependency, cf. Rouveret (2008: 186) for Welsh. Guilliot (2006: 1911) on the other hand documents reconstruction into an intermediate position in Breton.

involve the same set of lexical items: for one thing, the base-generation derivation has an additional pronoun (the resumptive); furthermore, the operators in the two derivations differ in formal features.

   Basing the definition of the reference set on the semantic interpretation has been shown to be undesirable (cf. Sternefeld 1997: 89ff.) because this would rule out all movement operations that do not lead to a truth-functional difference with respect to the base structure: Topicalization and scrambling should always be blocked by a non-movement derivation. furthermore, paraphrases of all kinds should no longer be possible. Using the S-Structure (the structure at Spell-out) as a criterion also does not work in the case at hand because there are substantial differences between a movement and a base-generation derivation:

(32) a. [$_{CP}$ Op ...   __]   *movement*

      b. [$_{CP}$ Op ...   pron]   *base-generation*

Clearly, the two derivations differ too much on the surface to belong to the same reference set. Identical LFs as a criterion, however, fares better, given certain assumptions: intermediate traces will have been deleted, and the bottom copy of the movement derivation is converted into a variable. Furthermore, through binding by the operator the resumptive pronoun will also function as a variable:

(33) a. [$_{CP}$ Op$_i$ ...   x$_i$]   ➔ λx ...   x   *movement*

      b. [$_{CP}$ Op$_i$ ...   pron$_i$]   ➔ λx ...   x   *base-generation*

If we adopt the copy theory of movement (Chomsky 1995) and apply the Preference Principle, the LF of a movement derivation will look somewhat different:

(34) a. [$_{CP}$ [Op NP] ... [Op NP]] ➔ (Preference Principle) b. [$_{CP}$ Op$_x$ ...   [x NP]]

The question then is, whether this still counts as similar enough to (33b). If we adopt the NP-ellipsis theory of resumption with the resumptive interpreted as a definite description with a silent NP-part (cf. 3.4.2), the parallelism is clearly stronger. If, in addition, the lower copy of movement is also interpreted as a definite description as in Fox (2002: 67f.), the parallelism will be almost perfect:[26]

(35) a. which boy Mary visited which boy   ➔ Trace Conversion

      b. which boy λx   [Mary visited *the boy x*]   (= the boy identical to x)

---

[26] Admittedly, the notion of LF is interpreted quite liberally here in that also processes are taken into account that will be relevant for semantic interpretation, e.g. reconstruction (one might therefore speak of LF-interpretation or LF-output). This may lead to an empirical problem for movement operations that are not truth-conditionally relevant such as topicalization. If there is full reconstruction of topicalized phrases, topicalization should always be blocked by the in-situ variant. Consider the following example (Sportiche 2006, ex. 70):

      i) A book, it is obvious everyone will buy.

      It seems that the entire fronted constituent can be in the scope of the universally quantified subject. At the same time the information structural properties must not be lost. I will provisionally assume that these do not reconstruct (cf. the hints in Sportiche 2006) so that a topicalized structure will end up with an LF different from that of a non-topicalized structure. Consequently, there will be no competition and topicalization will not be blocked.

I will consequently take the LFs of movement and base-generation derivations to be sufficiently similar for both to be part of the same reference set.[27] A copy of a movement chain can also be interpreted as an indefinite description to allow for scope reconstruction (Guilliot 2007, Bianchi 2008). Scope has, of course, important implications for the definition of the reference set and possible competitions. I will come back to this in 5.1 below.

4 Why is resumption/base-generation disfavored?

So far we have provided a syntax for gap and resumptive relatives. We have also concluded that gap and resumptive relatives belong to the same reference set and thus compete in the relativization of transparent positions such as subjects, direct objects and unembedded non-individual denoting types. What remains to be explained is why base-generation is blocked by movement in this case. We will therefore first discuss possible economy constraints. The second subsection will show that resumption/base-generation cannot be treated as universally more marked than gaps/movement. Subsection three shows that languages differ in the distribution of gaps vs. resumption. The last subsection provides an intermediate summary.

4.1 Potential economy constraints

The only possibility within Minimalism to favor one converging derivation over another one (in the same reference set) are translocal/transderivational economy constraints (cf. also Müller & Sternefeld 2001: 29). We will therefore evaluate different types of economy constraints for the syntax of Zurich German relatives.

4.1.1 Last Resort

The notion Last Resort is often appealed to in the literature. Its precise theoretical status, however, has not been discussed in much detail (cf. Collins 2001). A last resort is an operation that may apply only if the derivation crashes otherwise. Before discussing concrete implementations for resumption, let me briefly spell-out what Last Resort actually implies (I will refer to the more specific interpretation of Last Resort here, cf. Collins 2001: 46): it is some kind of translocal/transderivational meta-constraint that penalizes certain – often language-specific – operations if there is an alternative – converging – derivation that does not involve this operation. A famous example is *do*-support.

    The question is whether the notion Last Resort can be applied to resumption, especially to the implementation proposed here. I think the answer is negative. Last Resort refers to specific – somehow exceptional – operations that take place during a derivation. This works relatively well for *do*-support or a spell-out analysis of resumption. But in our case where resumption receives a classical base-generation analysis, i.e. where the resumptive derivation is very different from the gap derivation, the constraint cannot really be applied. Furthermore, resumption cannot be considered a language-specific operation in that resumption is typologically ubiquitous. In fact in some languages it is unmarked and sometimes even the only option (cf. 4.3 below). Finally, and this is arguably the theoretically most interesting aspect: referring to Last Resort essentially begs the question of why a given operation should be penalized, in the case at hand, why movement should be preferred over base-generation. This is what we find, but it would be desirable to find a deeper reason for this preference. In essence, Last Resort says that certain operations are uneconomical, but it does not say why. I conclude therefore that Last Resort is not a proper economy constraint but just a descriptive device. It is therefore insufficient for the present analysis.

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[27] More evidence suggesting that the definition of the reference set should be based on identical LFs can be found in Sternefeld (1997), Broekhuis & Dekkers (2000) and Broekhuis & Klooster (2007).

4.1.2 Derivational economy (Fewest Steps)

Aoun et al's (2001) approach to resumption relates the preference for movement over base-generation to derivational economy because on their analysis resumption involves more operations. In the base-generation analysis proposed here this is far from clear. Movement and base-generation involve the following operations (I include all operations that are necessary to establish an operator-variable dependency to be able to compare the two derivations):

(36) a. *Movement:* Merge (operator) + Copy (operator) + Merge (operator)

b. *Resumption:* Merge (operator) + Merge (pronoun)

Given this we would actually expect resumption/base-generation to be less costly than movement and not the other way around. Resumption might additionally involve a binding operation to link the operator with the resumptive, but it is unclear whether this operation should count as it is arguably not syntactic – at least it is not subject to syntactic constraints.

But even if we include the binding operation, the number of operations would be three in both derivations so that movement is in no way more economical. If we additionally consider successive-cyclic movement, a movement derivation will involve additional Copy and Merge operations so that the number of operations involved will easily exceed those of the movement derivation, unless the entire movement derivation counts as one instance of Form Chain.[28]

From a derivational perspective it is thus far from clear that movement is more economical. The previous discussion rather tends to suggest the opposite; derivational economy therefore does not work for the case at hand.[29]

4.1.3 Representational economy

The last possibility to be discussed is representational economy. We have already briefly discussed the two relevant constraints, namely SILENTTRACE (Pesetsky 1998) and the Avoid Pronoun Principle. I believe that representational economy cannot be applied to the case at hand: SILENTTRACE cannot be applied to base-generation because base-generation does not involve a trace/copy.[30] Conversely, the Avoid Pronoun Principle also cannot really be applied since the two derivations are too dissimilar: the movement derivation does not involve a pronoun. Furthermore the principle normally applies to derivations that differ only in that one has a silent pronoun and one an overt pronoun. The principle would therefore have to penalize pronouns quite generally, but this seems undesirable and would differ so much from the original definition of the APP that one would be dealing with a different principle.

Quite apart from these difficulties, both constraints also fail because they refer to overtness. But crucially, the choice in ZG is not between overt vs. zero pronoun/variable but

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[28] The remerger theory of movement may be another alternative, depending on how precisely it is formulated.

   The deletion operations at PF and LF (Preference Principle, NP-ellipsis theory of resumption) are another aspect that might have to be taken into account. Here, movement and base-generation probably involve the same number of operations: 2 instances of PF-deletion (restriction of the operator, complement of the resumptive/the lower copy) and 1 instance of LF-deletion (restriction of the operator).

[29] McCloskey (2002: 204) actually relates the preference for base-generation over movement in one particular case to the Merge over Move principle thereby treating base-generation as more economical.

[30] It is for this reason that in Salzmann (to appear a) I have used SILENTVARIABLE instead, a constraint penalizing overt variables. But since there are silent resumptives as discussed in the text below, this is not sufficient.

rather between very different derivations, namely between base-generation and movement. Additionally, as discussed in 3.2.1.3., many languages, including ZG, have silent resumptives. When the choice is between movement and base-generation with a silent resumptive, neither SILENTTRACE nor the APP apply.[31]

   Finally, it can be shown that representational economy and resumption are independent dimensions: resumptive elements are themselves subject to structural economy: if there is a choice between several forms of the resumptive, the weakest pronominal form is chosen. This is observed in the cases with silent resumptives discussed in 3.2.1.3: even though the corresponding base-constructions can optionally involve an overt pronoun (for emphatic reasons), *pro* is clearly preferred over the overt resumptive in relativization. I first list the base-constructions and then the corresponding relativizations:

(37) a. Ich ha   geschter ***pro*/im**   sin Vatter käne gleert.
        I   have yesterday   he.DAT his father got.to.know
        'I met his father yesterday.'

   b. ... dass-t   em   ***pro*/ du** würsch   hälffe
        that-AGR he.DAT   you would.2s help
        'that you would help him'

(38) a. Das isch   de   Schüeler,
        that is   the   student

        won i geschter [DP ***pro*/??im**   sin Vatter] käne gleert han.
        C   I yesterday   he.DAT his father   got.to.know have

        'This is the student whose father I met yesterday.'   cf. Salzmann (to appear b)

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[31] Unfortunately, it is difficult to come up with concrete examples for this. The situation arises in principle in *pro*-drop languages that allow resumption. The relativization of a subject in such a language could therefore involve either movement or base-generation. One probably assumes movement to apply in this configuration, but I am not aware of explicit discussion about this issue. Empirical evidence that would clearly point towards one or the other analysis is hard to find. The only evidence I can think of are semantic restrictions imposed by the resumptive on the external head, cf. the discussion in 5.1 below. To my knowledge no such restrictions are found with subject relatives in e.g. Italian; i.e. a negatively quantified head (which is normally incompatible with resumption, cf. Sharvit 1999) is unproblematic:

i) non ho   ancora trovato **nessuno** che a   detto che i   servizi non funzionano
   not have.1SG yet   found   no.one   C   has said that the services not work.3PL

This fact has been confirmed to me by Paolo Acquaviva. This suggests that movement rather than base-generation is involved. Italian is admittedly a problematic case since resumption is generally not accepted in the standard language; even resumptives (including *pro*) inside islands are degraded for many speakers.
   Comparable evidence in Zurich German is hard to come by. As discussed in 3.2.1.3 above, silent resumptives are found in Spec, DP of a possessor phrase, which is intransparent for extraction so that resumption is the only option. The relativization of a second person singular as in 3.2.1.3 is a possible case, however, as silent *pros* are also licensed for matrix subjects, a transparent domain. The general preference for movement over base-generation in ZG would argue for a movement derivation in that case, but I cannot think of any empirical evidence (similar to the one presented for Italian) that could help distinguish the two analyses since second person pronouns are necessarily specific. Within intransparent domains as in 3.2.1.3, only a base-generation analysis involving *pro* is an option, of course.

b. du, won ich glaube, dass es < niemert git,
   you C   I believe that it   no.one is

   wo-t   em   ***pro*/??du** würsch   hälffe >
   C-AGR   he.DAT   you   would.2s   help

   'you, such that I believe that there is no one who you would help'

Importantly, the degradedness cannot be related to a general ban against strong resumptives, because they are in principle possible in the language, for instance in the relativization of an object of comparison:

(39) de äinzig Bueb i   de Klass, won i gröösser bin als   **ëër/*er**
      the only boy   in the class   C   I bigger   am   than he/he
      'the only boy in my class that I am bigger than'

Here, the strong pronoun is obligatory, as in the underlying expression:

(40) Ich bi gröösser als   **ëër/*er**.
      I   am bigger   than him/him
      'I am bigger than him.'

I conclude that representational economy cannot account for the preference for movement over base-generation in Zurich German relatives. Rather, representational economy is completely orthogonal to resumption.

4.2 Resumption is unmarked

The previous subsection has shown that it is unclear which economy constraint prefers movement over base-generation. This subsection will establish that penalizing resumption by a universal economy constraint is problematic for principled reasons since resumption/base-generation is not more marked than movement.

First, there are languages that do not have gap derivations at all, but only resumption, e.g. Palauan (Georgopoulos 1985/1991), Urhobo in the sample of Keenan & Comrie (1977) as well as several languages in the sample of Comrie & Kuteva (2005); many more languages use resumptives systematically in various grammatical environments. Secondly, resumptive strategies are often the first strategy acquired by children, even in languages with relative pronouns in the adult language, cf. e.g. Labelle (1990) on Canadian French or Goodluck & Stojanovic (1996) on Serbo-Croatian.[32] Third, crosslinguistically, relative pronouns are very rare, they are basically restricted to the standard languages spoken in Europe (while the non-standard languages usually use resumption). While gap relatives (without relative pronouns) are frequent crosslinguistically, this arguably does not show that movement is unmarked because they often represent different constructions, cf. e.g. the illustration of the flexible modification constructions in many Asian languages (Comrie 1998).

Given these facts from typology and acquisition it is clearly unwarranted to assume that movement is generally less marked than resumption. With respect to language acquisition, resumption is perhaps even less marked than movement.

4.3 Cross-linguistic variation in the distribution of strategies

Next to general issues of markedness it is instructive to study how the two relativization strategies are distributed within single languages. Some languages have only one strategy;

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[32] But see Guasti & Cardinaletti (2003) for evidence that Italian- and French-speaking children master both gap/movement and resumptive relatives from the beginning.

more interesting in the present context is the second group of languages where both strategies are possible.

4.3.1   One strategy only

4.3.1.1 Resumption only

Palestinian is a languages that has only *that*-relatives. Resumptive pronouns are found in all positions. Here is an example where a direct object is relativized:

(41) l-bint   ʔilli   šufti-*(ha)   DO
       the-girl   C   saw.2s.FEM-her
       'the girl that you saw'   (Shlonsky 1992: 445)

Movement is not an option in this language.[33] Importantly, resumptives appear in absolutely transparent positions such as the matrix direct object. They thus do not seem to be forced by a grammatical constraint.

4.3.1.2 Only movement

Many European standard languages, e.g. Standard German and Standard Dutch, only have gap/movement relatives. Resumptives are impossible, they do not even occur as a last resort to ameliorate locality violations (cf. 6.3 below for discussion of complete ungrammaticality):

(42) * Wen$_1$ freust   du dich, wenn du   ___$_1$/ihn$_1$ siehst?
         who.ACC be.happy you self   when you   him   see.2s
         lit.: 'Who are you happy when you see?'

4.3.2   Both strategies

Many languages have both gap and resumptive relatives. There is one very important distinction: in the first group gaps/movement seems to be the default while resumption/base-generation only occurs as a last resort; in the second group, both strategies can occur in the same environment.

4.3.2.1 Gaps/movement as the default, resumption/base-generation as a last resort

Zurich German belongs to this group. Gaps and resumptives are in complementary distribution (impossible for SU/DO, but obligatory for oblique positions). There are more languages that show the same pattern. Examples are colloquial Czech (Toman 1998), restrictive relatives in Greek (Alexopoulou 2006), Welsh (Rouveret 2008),[34] Breton (Guilliot 2006) and several in the sample of Keenan & Comrie (1977).

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[33] Palestinian Arabic does not have resumptives for matrix subjects. This is a frequent constraint on resumption, cf. Boeckx (2003); I will therefore ignore this complication. There are, however, languages that have resumptives in all positions including (matrix) subjects, e.g. Palauan (Georgopoulos 1985/1991), Yiddish (Lowenstamm 1977), and non-standard varieties of Spanish (Suñer 1998).
[34] See Willis (2000) for a different view on Welsh.

   Where no grammatical principle (like locality, recoverability of oblique case) is at stake, gap/movement relatives occur. Where a gap/movement derivation violates a principle of grammar, resumption/base-generation is the only option.[35]

4.3.2.2 Optionality between gap/resumptive in transparent positions

Several languages allow both gaps and resumptives in the same environment, i.e. there is no complementary distribution as in the previous group. Irish is a famous case. It allows both gaps and resumptives in absolutely transparent positions such as matrix direct object and embedded subject/direct object. Gap and resumptive relatives are associated with different complementizers. Here is an example with a matrix direct object:

(43) a. an fear **a** bhuail tú __   b. an fear **ar** bhuail tú **é**
        the man aL struck you   the man aN struck you him
        'the man that you struck'   'the man that you struck'
                                                          (McCloskey 1990: 205)

The resumptive thus does not occur as a last resort. Inside islands only the resumptive/base-generation derivation is possible.
   Many Slavic and Romance languages (Suñer 1998) have both *wh*-relatives and *that*-relatives. *Wh*-relatives are always associated with gaps while *that*-relatives are compatible with resumptives. Here is an example illustrating relativization of an indirect object in Serbo-Croatian (Goodluck & Stojanovic 1996: 290):[36]

(44) a. čovek **kome**   sam   **(*mu)** to   rekla
        man   who.DAT aux.1s   he.DAT that   said
        'the man to whom I said that'

    b. čovek **što**   sam   ***(mu)** to   rekla
        man   rel   aux.1s   he.DAT that   said
        'the man that I said that to'

Hebrew only has *that*-relatives. In certain positions, the matrix direct object and embedded subject/direct object, both gaps and resumptives are possible. Here is an example where a matrix direct object is relativized. The resumptive is optional:

(45)   ha-ʔiš   še   raʔiti   **(ʔoto)**   DO
       the-man that saw.1s   him
       'the man that I saw'   (Shlonsky 1992)

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[35] Interestingly, resumption is sensitive to some islands in all of these languages except in ZG. I take this to be an accidental fact, i.e. I believe that once a larger sample of well-studied resumption languages were available more languages of the Zurich German type could be found. For the other languages it is clear that gaps are the default and resumptives are a last resort; but whether they really involve base-generation is unclear given the sensitivity of resumption to certain locality constraints.

[36] In most of these languages, gap-relatives with complementizers are possible as well, namely for subjects and direct objects, where no principle (oblique case, islands) requires overtness. One cautionary remark is in order, though: it is not clear whether both strategies actually co-occur in the same variety. The *wh*-strategy is the norm of the standard language while *that*-relatives are found in colloquial/non-standard varieties. It is therefore not clear whether we are dealing with optionality within the same language proper if a speaker uses both patterns.

Importantly, as in Irish, we find gaps and resumptives in absolutely transparent positions. Resumptives cannot be a last resort here because no grammatical principle is violated. In islands only resumption/base-generation is possible: [37]

(46) hine ha-sendvic še pagašti < ʔet ha-ʔiša še ʔaxla **ʔoto/*___** >
     here the-sandwich that met.1ms ACC the-woman that ate it
     'Here is the sandwich such that I met the woman who ate it.'   Shlonsky (2004)

4.4 Intermediate conclusion

The various types of economy constraints reviewed in this section ran into difficulties when applied to Zurich German: representational economy like the Avoid Pronoun Principle has been shown not to work. Under derivational economy it is not clear that movement actually turns out to be more economical than base-generation as implemented here.

    But even if some notion of economy could be found one is still confronted with the problem that economy constraints in Minimalism are generally taken to hold universally, i.e. there is no room for parametrization of economy constraints, cf. Müller & Sternefeld (2001: 29). We would therefore expect a universally consistent preference direction. But this is at odds with the typological facts/cross-linguistic variation surveyed in this section: in some languages, resumption is the only option (e.g. Palauan). In other languages, the choice between resumption and movement is free (Irish, Hebrew). In still others, movement is the default and resumption is a last resort (Zurich German). It seems therefore that individual languages can make different choices with respect to which strategy is the default. Before we discard an approach in terms of Minimalist economy, we briefly need to look at one potential counterargument against the reasoning presented here.

5 Pseudo-optionality?

Suppose that we find an independent explanation for why languages like Palauan, which only have resumption, do not have gaps. For instance, one could argue that for some reason the language simply does not have the right type of operator that would make a movement derivation possible. For instance, one could argue that it only has case-unmarked operators, therefore only allowing base-generation (cf. also 6.3 below). Suppose further that we can explain away the optionality in languages like Irish or Hebrew. We would then be left with languages where movement is the default and resumption acts as a last resort. A minimalist economy constraint that universally penalizes resumption might then still be a viable option. The solution for the Palauan facts is arguably not too controversial. The question is whether the optionality problem in Hebrew/Irish can be explained away. It will be argued in this section that it cannot.

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[37] I am not familiar with languages that use resumption as a default, but allow movement in restricted environments (where resumption is ruled out for independent reasons). A possibility I can think of is relativization of non-individual-denoting types (cf. the discussion in 3.3.2) where resumption would be unexpected since languages often do not have proforms for these types. Such a language would be eminently important because this would clearly show that the relative preference for movement or base-generation can indeed be the other way around. So far we only have a preference for movement (ZG) or optionality (Irish/Hebrew), but if we could find a language of the type sketched here we would have independent evidence that economy constraints can be ranked in different ways. Another consequence would be that parametrization of the reference set (cf. 5.2 below) would not be sufficient to capture the variation.

5.1 The role of scope

It is a well-known fact that resumptives impose semantic restrictions on their antecedents, in the case at hand this would be the external head of the relative. Resumptives generally require a specific head and block scope reconstruction. This implies that one does not get multiple-individual readings, no *de dicto* readings and no amount readings, cf. Doron (1982), Suñer (1998), Sharvit (1999), Boeckx (2003), Bianchi (2004, 2008), and Guilliot (2007) for exemplification in various languages; recall also the asymmetry in Zurich German discussed in 3.3.2. Since we have been assuming that the reference set is based on identical LFs we expect differences in scope to have consequences for competition. Since gap and resumptives relatives seem to be associated with different interpretations once scope is involved, this might be an explanation for the optionality we find in Irish or Hebrew. The idea would be that gap relatives have a narrow scope/scope reconstruction reading while resumptive relatives have a wide scope/non-reconstruction interpretation. Assuming this to correspond to different LFs, we would expect the two derivations to be in different reference sets so that there is no competition and the optionality we find would only be apparent, i.e. not the result of optionality of some syntactic process. One could then argue that resumptives occur (as a last resort) to express specificity (cf. e.g. Boeckx 2003). However attractive this may seem, this alternative fails for various reasons: first, while this might work for languages where there is optionality, the question is what happens in languages like ZG where there is no optionality, i.e. where movement blocks base-generation. Since the interpretive facts are the same in Zurich German, the asymmetry in the distribution of resumptives is unexpected. Secondly, while there is an asymmetry concerning narrow scope/reconstructed readings between gap and resumptive relatives, no such asymmetry obtains with respect to wide scope/non-reconstructed readings (cf. also Bianchi 2004/2008): gap relatives consistently allow wide scope interpretations just like resumptive relatives. This can be illustrated by the following famous pair from Hebrew. While the resumptive relatives are restricted to the wide-scope/*de re* interpretation, gap relatives allow both the de dicto and the *de re* interpretation (cf. also the ZG facts in 26):

(47) a. Dani yimca   'et ha-iša   še   hu mexapes __   (Doron 1982: 25)
          Dani will.find ACC the-woman that he seeks
          'Dani will find the woman he is looking for'   √ de dicto, √ de re

      b. Dani yimca   'et ha-iša   še   hu mexapes **ota**
          Dani will.find ACC the-woman that he seeks   her
          'Dani will find the woman he is looking for'   * de dicto, √ de re

This implies that while there is no competition with narrow scope readings, there will be competition with wide scope readings. Consequently, gap and resumptive relatives are expected to compete in that case and only the movement derivation is expected to be grammatical, contrary to fact. In other words, the optionality problem remains, as does the variation problem, i.e. the difference between Zurich German on the one hand and Irish/Hebrew on the other.[38]

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[38] Bianchi (2004/2008) claims that scope reconstruction *is* possible in resumptive relatives if the resumptive occurs to express oblique case or to prevent preposition stranding. She provides evidence from Romance languages and Hebrew. In Salzmann (2006b) I discussed this issue in some detail for Zurich German. The empirical facts are very tenuous and clear results are hard to come by. It seems that scope reconstruction is not entirely impossible under resumption. To some extent it tends to depend on the type of resumptive, and the generalization seems to be somewhat different from the one described by Bianchi. But even if reconstruction were freely available under resumption, this would not be a problem for the reasoning in this section; in fact, it would make the optionality problem even worse since one would expect competition under all interpretations, and the pseudo-optionality explanation for Irish/Hebrew would fail completely.

5.2 Parametrizing the reference set

The optionality problem in Irish and Hebrew has been addressed in the literature; not so much from an economy perspective but rather from the more general Chomskyan perspective that tries to avoid optionality in the syntax. I will briefly review the discussion.

We saw above that Hebrew allows both movement and base-generation in certain positions, e.g. the direct object. Shlonsky (1992) reanalyzes the optionality as pseudo-optionality. He argues that both derivations are based on different numerations and therefore do not compete (since the work predates Minimalism he phrases this differently, but the idea is basically the same). The crucial difference is supposed to be the complementizer. Even though there is no surface difference, Shlonsky argues that there are two different (though homophonous) Cs: C1 turns Spec, CP into an A-position. This will lead to gaps for subjects – under the assumption that relativization can also be an instance of A-movement (a claim that is far from uncontroversial, of course). However, once direct objects and lower positions are relativized, movement is no longer possible because the subject position, an A-position, intervenes. Relativization of lower relations by means of movement is thus blocked by the Minimal Link Condition. In that case, only resumption is a possibility. The second complementizer is of the standard type. It is associated with an A'-specifier and therefore allows movement in all transparent/non-oblique positions. Consequently, if we find optionality e.g. for matrix direct objects this is because we are dealing with two independent derivations that are not part of the same reference set.

McCloskey (2002: 205) makes similar assumptions for Irish. Movement and base-generation involve two different complementizers. The movement complementizer *aL* is associated with an EPP and an uninterpretable operator feature. The complementizer associated with base-generation *aN* only carries an EPP feature. Since we are dealing with different numerations movement and base-generation derivations do not compete and are therefore both grammatical in certain environments.

If the reference set is indeed based on identical numerations as (tacitly) assumed in these contributions the optionality can be derived.[39] However, this leaves the Zurich German facts unexplained where the reference set must be based on identical LFs to get the desired result. It seems that both solutions cannot be correct at the same time. There is one rather radical way out of this dilemma, namely the parametrization of the reference set (cf. Sternefeld 1997: 97ff.). For Zurich German we could argue that the reference set is based on identical LFs so that we get competition between movement and base-generation. For languages like Hebrew/Irish and many Romance languages, however, the reference set would be based on identical numerations. We therefore would not get any competition between movement and base-generation, and the result would be optionality.

In the next section I will propose a different solution because a) it is very much unclear whether one of the classical MP-economy constraints can be used at all to prefer movement over base-generation and b) because the alternative will allow a unification with other phenomena.

6 Explaining the distribution of gap and resumptive relatives

The previous sections have shown that three related aspects seem insurmountable for an MP approach: first, none of the existing economy constraints is easily applicable to the Zurich German facts. Second – the optionality problem – even if such a constraint could be found it would not hold in languages like Irish/Hebrew; this is normally thought to be impossible.

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[39] Since Shlonsky (1992) assumes that base-generation actually involves an A-specifier while movement involves an A'-specifier we might in fact be dealing with two different LFs after all. However, I must admit that I do not really understand what kind of interpretation we get if we base-generate an operator in an A'-position and have it bind a resumptive. Whether this leads to a well-formed interpretation at all is not clear to me.

Third – the variation problem – the constraint has to be flexible enough to penalize resumption in some languages but not in all languages; again this is a property incompatible with Minimalist economy constraints (cf. Müller & Sternefeld 2001).

   I would therefore like to propose that a different type of constraint is needed. The empirical facts show that the constraint must be violable and rankable in different ways with respect to other constraints. These are, of course, the properties of Optimality-theoretic constraints. While I do not adopt a classical OT-framework (but rather the Derivations and Evaluations framework by Broekhuis 2008, cf. Salzmann 2008/to appear a) and 6.2/6.3 below, I will assume interface and economy constraints with exactly these properties.

6.1 Penalizing resumption by means of violable, ranked constraints

The crosslinguistic facts surveyed so far have shown that we need to be able to penalize both movement and base-generation. Penalizing Movement is usually done by the constraint *MOVE (also known as STAY). What remains to be found is a constraint that penalizes resumption/base-generation. In Salzmann (2008/to appear b) I used the brute-force constraint *RES. This is a representational constraint that penalizes representations with an A'-bound pronoun. Indirectly, this also penalizes base-generation in resumption. This is descriptively sufficient to capture the crosslinguistic variation between ZG and Irish/Hebrew: in ZG *RES outranks *MOVE, while in Irish/Hebrew the constraints are tied:

(48) a. movement as a last resort (ZG): *RES >> *MOVE

     b. optionality (Irish, Hebrew):   *RES <> *MOVE

Of course, this 'analysis' basically restates the observational facts. It would be desirable to find a constraint that is independently needed. I believe that a constraint postulated in Broekhuis & Klooster (2007) and Broekhuis (2008) is exactly what we are looking for. Broekhuis & Klooster argue that next to penalizing movement by means of *MOVE it is also necessary to penalize External Merge, namely by means of *MERGE. They use the following difference between English and Dutch in negative sentences to motivate the constraints:

(49) a. Jan   is [NEGP over   niemand]$_1$ ___$_1$ tevreden.   (Dutch)
         John   is   about no.one   happy
         'John is not satisfied with anybody.'

     b. John is [NEGP not] satisfied with anybody.

In Dutch, the [+neg] feature is checked by means of movement (= Internal Merge) while in English it is checked by means of External Merge of a negative adverb. Broekhuis & Klooster (2007) derive this difference by means of different rankings of the two economy constraints:[40]

(50) a. English: *MOVE >> *MERGE   b. Dutch: *MERGE >> *MOVE

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[40] The analysis is based on the assumption that the alternative construction *John is satisfied with nobody* is ungrammatical, which, as they admit, is not totally innocuous. Furthermore, the Dutch variant with negative adverb and NPI *Jan is niet tevreden over ook maar iemand* 'John is not satisfied with anyone at all' only allows constituent negation and is therefore irrelevant. Finally, English negative subjects and direct objects are possible without NPIs: *Nobody was sitting in the room; it solves nothing*. For the first case Broekhuis & Klooster (2007: 33f.) argue that the alternative with an NPI is less economical; for the second case they argue that it does not belong to core syntax.

German and Zurich German behave like Dutch with respect to negation (although the postulation of a NegP may be controversial in German). I would like to argue that the preference for movement over base-generation in ZG can be handled by the same ranking since base-generation is, of course, a case of External Merge. For languages like Hebrew/Irish we can then assume that the two economy constraints are tied:

(51) a. Zurich German: *MERGE >> *MOVE   b. Irish/Hebrew: *MERGE <> * MOVE

The ranking in English is reminiscent of the well-known Merge over Move constraint which is evoked in certain raising constructions:

(52) a. There$_1$ seems ___$_1$ to be a man outside   b. *There seems a man$_1$ to be ___$_1$ outside

At the point where the embedded Spec, TP is created merging the expletive is preferred over movement of the subject. The Merge over Move principle thus applies locally. From a global perspective both derivations seem equally economical. They involve the same number of operations. In fact when something like Shortest Move is taken into consideration, the b)-example might in fact be more economical since fewer nodes are crossed by movement of the subject. The Merge over Move principle is thus very different from the constraints postulated here because they do not apply locally, at least not in the resumption case. Rather, complete representations are inspected and compared. In the resumption vs. movement case we have representations where an uninterpretable/unvalued feature of a C-probe is either checked/valued by means of External Merge or Internal Merge:[41]

(53) a. [$_{CP}$ XP C ... Pron]   vs.   b. [$_{CP}$ XP C ... ~~XP~~   ]

It is easy to show that the decision between External or Internal Merge, i.e. between base-generation or movement cannot be made locally in ZG relatives. Given the ranking *MERGE >> *MOVE a local application would imply that this is decided when the relevant C-probe is introduced. However, this does not work because the choice between movement and base-generation has to be made at the very beginning of the derivation, i.e. whether a case-marked operator is merged or a resumptive pronoun. This decision, however, cannot be based on grammatical information available in the syntactic tree because at that point the derivation does not include the relevant probes yet; furthermore, the choice between the two derivations depends on convergence, e.g. whether an island is involved or not. However, at the point where either a case-marked operator or a resumptive pronoun is merged it is not yet clear that there will be an island. Again, a local decision is impossible. Even if a top-down derivation is chosen the decision still cannot be made locally since given the implementation of base-generation proposed here movement and base-generation involve different operators so that again the choice between the two is made at the very beginning. Even if there were only one operator, one would immediately have to decide whether to move this operator (to get a movement derivation with successive-cyclic movement) or to leave it in the operator position (and thus get base-generation). But again, no grammatical information (such as potential islands) would be available on which to base the decision.[42] This implies that both

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[41] Importantly, the constraint *MERGE does not apply to selectional features or theta-features, which are normally checked by means of External Merge.

[42] A local decision would be possible under a top-down derivation if there is no successive-cyclic movement and if the operator is the same in both derivations. In that case the decision could be made when the final landing site, i.e. the theta-position, is introduced. If there is no island (and we are not dealing with a dative argument) movement will be chosen, otherwise a resumptive will be inserted. This solution comes at a certain price, of course, given that successive-cyclic movement is well-established. Furthermore, since such a derivation allows access to a very large part of the syntactic structure, basically the entire one, it is at odds with strongly derivational approaches to syntax which allow only access to a small part of the grammar as well as attempts to restrict economy constraints to local decisions, which is at the heart of local constraints like Merge over

movement and base-generation are independent options and will therefore lead to converging derivations unless independent factors such as locality interfere (in the movement derivation). Preferring movement over resumption is therefore only possible after the derivations are completed. We are thus dealing with translocal (representational) constraints.

This approach is, of course, incompatible with a putatively universal Merge over Move principle. The effect in (52) therefore has to be reanalyzed, cf. Broekhuis & Klooster (2007) for discussion. I have not been able to find independent evidence for the ranking in Hebrew/Irish. Given what has been said so far we would expect other instances of optionality. I will have to leave this for further research. In the next subsection I will provide further evidence in favor of the type of constraint argued for here.

6.2 Interaction with other constraints

I have pointed out several times that a conflict of economy constraints or a parametrization of them is not taken to be a possibility in Minimalism (cf. again Müller & Sternefeld 2001: 28f.). This is why I adopted violable and rankable constraints as they are familiar from Optimality Theory. By means of re-ranking the crosslinguistic variation can be handled straightforwardly. Furthermore, unification with other phenomena becomes possible. In this section, I will present additional evidence for OT-type constraints by showing that they interact with further independently necessary constraints.

I briefly mentioned in fn. 3 that dative relativization is more complex than suggested at the beginning. As discussed in detail in Salzmann (2008/to appear a) and Salzmann & Seiler (in prep.) dative resumptives occur less systematically than previously assumed; they are optional for many speakers. In the previous work just cited I employed the interface (PF-)constraint RealizeObl to force dative resumptives. Derivations that leave dative unexpressed incur a violation of this constraint. Under an MP-setting this constraint would be violated whenever dative relatives contain gaps and since it is an inviolable MP-constraint (it is not an economy constraint) we expect the derivation to crash. The sort of optionality found is completely unexpected, only resumptive dative relatives should be possible. Adopting violable and rankable constraints provides a way out. We thus need a violable REALIZEOBL that interacts with a constraint that favors gaps. Recall that the ranking *MERGE >> *MOVE leads to a preference for movement in ZG. The optionality of dative resumptives can be captured if REALIZEOBL is tied with *MERGE:

(54)   solution: REALIZE OBL <> *MERGE >> *MOVE

The following tableau illustrates the competition for dative relativization:[43]

			REALIZEOBL	*MERGE	*MOVE
☞	a.	+ res		*	
☞	b.	− res	*		*

Depending on how the tie is resolved we either get movement (*MERGE >> REALIZEOBL) or base-generation (REALIZEOBL >> *MERGE). Since a violable REALIZEOBL is independently needed and since interaction with the postulated *MERGE constraint derives the correct result for dative relativization we have independent evidence that the constraints required to model the crosslinguistic variation in resumption must be violable and rankable.

While I have been employing constraint types familiar from Optimality Theory I do not adopt a classical OT model. Rather I adopt the Derivations & Evaluations model by Broekhuis

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Move. Thus even if such an approach were taken, it would suffer from rather severe conceptual inconsistency.

[43] Importantly, this is a global tie (cf. Müller 2000 for an overview) so that lower-ranked constraints like *MOVE do not interfere.

(2008) which combines a restrictive MP-like generator with an OT-evaluator. This means that certain properties, especially universal properties, are not handled by the evaluator but by the generator. For instance, the impossibility to move out of islands does not follow from a putative constraint LOCALITY that would outrank *MERGE as one might expect. Rather, such a derivation is already ruled out by the generator, due to a derivational locality constraint. For evidence in favor of this position cf. Salzmann (2008/to appear a) and the next subsection.

6.3 Complete ungrammaticality in one-strategy languages

Under an Optimality-theoretic approach languages that only have one strategy (cf. 4.3.1) become problematic because one has to find an explanation why the other strategy is unavailable.

For languages with resumption only (4.3.1.1) it is insufficient to argue that this is due to the ranking *MOVE >> *MERGE. While this would work for most of the cases it is conceivable that there will be environments where resumption is impossible, e.g. in the relativization of non-individual-denoting types for which proforms often do not exist. In those cases, the ranking *MOVE >> *MERGE would predict movement to be possible. Even though this possibility cannot be ruled out, I have so far not been able to find languages with this pattern (cf. also fn. 37). Rather, relativization of such types will simply be impossible, we are dealing with complete ungrammaticality. The same is found in languages like Standard German which disallow resumption in all environments; resumptives are not even an option to prevent violations of locality (4.3.1.2). If we derive the preference for movement over base-generation by the ranking *MERGE >> *MOVE we would expect base-generation to emerge where movement is impossible (as in Zurich German). This is, however, not the case; we find the same complete ungrammaticality.

Complete ungrammaticality is a general problem for Optimality Theory (cf. e.g. Müller 2000: 82ff. for possible solutions). For resumption only-languages, the most straightforward solution to explain the impossibility of movement is to attribute it to the lexicon: for such languages one can assume (as discussed at the beginning of section 5) that they simply do not have the right operators to check both case and peripheral features. Rather, they only have case-unmarked operators and therefore only allow base-generation. When base-generation is independently ruled out (no proper proform), ungrammaticality results; there simply is no way of generating such a structure. This type of explanation is straightforward in the Derivations & Evaluations model. For movement-only languages I would first like to consider an alternative explanation, one in terms of repair (Müller 2000: 86ff.). Consider again ungrammatical extraction from islands in Standard German, both under movement and under resumption:

(55) * [Welcher Autor]$_1$ glaubst du, dass Maria
    which   author believe you that Mary

   < jedes Buch liest, das ___$_1$/er$_1$ schreibt>?
    every book reads which   he writes

   lit.: 'Which author do you believe that Maria reads every book that writes?'

Under a repair-solution, base-generation into an adjunct island results in ungrammaticality if there is an alternative derivation/representation with a better constraint profile. One possibility is a widespread alternative to long A'-movement, a construction which I have termed resumptive prolepsis in Salzmann (2006b). In this construction, there is short extraction from the matrix clause and the extracted constituent is related to a pronoun inside the island:

(56)   [Von [welchem Autor]$_i$]$_1$ glaubst   du   __$_1$,
      of   which   author   believe   you

       dass   Maria   < jedes   Buch   liest, das   er$_i$ schreibt>?
       that   Mary   every   book   reads which   he   writes

     lit.: 'Which author do you believe that Mary reads every book that writes?'

While (56) is indeed grammatical it is unclear whether it really blocks (55) because it is not clear whether they compete. The semantic interpretation is certainly almost identical; however, it is far from clear that the two have the same LF. They probably do not differ in scope: resumptive prolepsis disallows scope reconstruction (Salzmann 2006b), but (55) under resumption is arguably subject to the same interpretive restrictions. But in resumptive prolepsis there certainly is short extraction (*wh*-movement/topicalization/ relativization) in the matrix clause and the fronted constituent is somehow related to the pronoun inside the island. The solution proposed in Salzmann (2006b) involves predicate abstraction in the complement clause thereby licensing an extra constituent in the matrix clause, the *of*-constituent. It seems that we get at least two chains in resumptive prolepsis compared to just one under base-generation. Furthermore, the matrix-clause extraction in resumptive prolepsis leaves a trace that is relevant for LF as anaphor binding by matrix subjects is possible; binding in intermediate positions is otherwise degraded in German (recall fn. 25), as shown by the following contrast (Salzmann 2006b: 188):

(57) a. [Von **sich**$_i$]$_1$ denkt **Peter**$_i$ __$_1$ immer, dass alle Menschen ihn$_i$ toll   finden.
       of   self   thinks Peter   always that all   people   him   great find
       'Himself$_i$ Peter$_i$ always thinks all people find great.'

    b. *[**Sich**$_i$]$_1$ denkt **Peter**$_i$ immer, dass alle Menschen __$_1$ toll   finden.
       self   thinks Peter   always that all   people   great find
       'Himself$_i$ Peter$_i$ always thinks all people find great.'

Consequently, it is not clear whether (56) and (55) are in the same reference set. Even if we ignore this problem for the moment, there is another serious problem: it is completely unclear which constraint would favor (56) over (55). *MERGE is probably not sufficient. While there is movement in the matrix clause in resumptive prolepsis and thus no violation of *MERGE, there may be an additional instance of External Merge in the complement clause if one adopts the solution from Salzmann (2006b) where an operator binds the resumptive pronoun (to get predicate abstraction and thus license the extra constituent in the matrix clause):

             A`-mvt   ellipsis   predicate abstraction

(58)   [$_{CP}$ [P[**DP**$_i$]]$_2$ [P[**DP**$_i$]]$_2$ V [$_{CP}$ [Op**XP**]$_i$ **DP**$_i$ V]]   *wh*-movement/
                         subject   predicate   topicalization
                              predication

Under this analysis, resumptive prolepsis violates *MERGE just like (55). Furthermore, since there is an additional movement step in the matrix clause, it also incurs a violation of *MOVE. Consequently, resumptive prolepsis arguably has a worse constraint profile than regular base-generation. It is therefore undesirable to assume that they compete. The ungrammaticality of (55) then cannot be due to the fact that it is blocked by a better candidate. Rather, I propose that (55) is simply ruled out by the lexicon: as discussed in 3.4.1, base-generated operators must be case-unmarked since case-feature checking/valuation is

impossible in that position. But since wh-operators and topicalized constituents in Standard German are case-marked, base-generation is not an option. (55) simply cannot be derived (see Salzmann to appear b: section 4 for detailed discussion).[44]

Both in resumption-only and movement-only languages the limitation to one type of derivation is thus not the result of constraint interaction, but rather due to the lexicon. Other types of language variation, such as the distribution of resumptive vs. gap relatives, however, is due to constraint interaction. The facts discussed in this paper thus provide evidence that language variation cannot either be reduced to the lexicon as in much MP-work; nor can it be reduced to constraint interaction as in most work within OT. This result is directly compatible with the Derivations & Evaluations model adopted here which combines aspects of both the Minimalist Program and Optimality Theory.

7 Conclusion

In this paper I have argued that Zurich German provides evidence that gap/movement and resumptive/base-generation derivations compete. After dismissing movement accounts of resumption, I have proposed a base-generation analysis. The type of analysis proposed here implies that base-generation differs structurally significantly from movement. But since gap and resumptive relatives compete they must belong to the same reference set. This is only possible if the reference set is based on identical LFs. Zurich German provides evidence that movement is preferred over base-generation when both derivations converge. I have discussed various potential Minimalist economy constraints to explain this preference, but they fail for principled reasons: they are at odds with facts from typology and acquisition. Resumption is not always more marked than movement; in some languages there is only resumption, in others both gap and resumptive relatives exist next to each other. This state of affairs is incompatible with Minimalist economy constraints because they are taken to hold universally. We would therefore expect the same preference as in Zurich German universally, contrary to fact. The solution I have argued for relies on violable, ranked constraints. I have proposed *MERGE to penalize base-generation and *MOVE to penalize movement. This allows a straightforward description of the crosslinguistic variation. Furthermore, it allows unification with independent phenomena such as negative sentences. I have finally shown that violable, ranked constraints are indispensable to capture variation in Zurich German dative relativization. Since this type of constraint is needed independently we have additional motivation for the types of economy constraints proposed here.

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[44] It is often assumed in Optimality-theoretic work that the inventory of certain elements, e.g. elements in the left periphery, is the result of constraint interaction, cf. e.g. Pesetsky (1998), Broekhuis & Dekkers (2000). In Salzmann (2008: section 5.2) I have presented several arguments against this position.

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