4 Previous accounts

This chapter reviews representative accounts of extant approaches to sluicing, and shows that each of them fails either to deal with the apparent island-insensitivity of sluicing or with the form-identity facts documented in chapter 3.

This is of course not to say, however, that the conclusions reached in this chapter are wholly negative. Along the way, we will have occasion to uncover a richer set of data than the schematic data presented in chapter 3, and will begin to touch on a range of analytic questions that will be taken up again in chapter 5.

4.1 Ross 1969: deletio nata atque mortua

Ross 1969 proposes a simple deletion account, where deletion of the sentential part of an embedded question is licensed by phrase-marker identity with a preceding sentence. The particular formulation he gives will not concern us (even at the time, Ross recognized its shortcomings), but rather its overall approach, translated into our current understanding of PF-deletion.

For Ross, the great advantage of the deletion account, contrasted with a purely interpretive account, was that it could account directly for the case-matching effects. Although he didn't give an actual derivation of his German examples (because his particular formulation of sluicing actually couldn't handle them, due to the V2/V-final alternations involved), we can see how such a derivation would proceed, provided that the condition regulating identity is not, as assumed by Ross, a condition on S-structure phrase-marker identity, but rather the condition proposed in chapter 1. Under this conception, the sluice in (1) simply derives from the corresponding embedded question (where deletion is indicated by struck-through text). Since the verb *schmeicheln* assigns dative case, this will be the only possibility for the case of the remnant wh-phrase.

(1)　　Er will　　jemandem　　　schmeicheln, aber sie　wissen nicht,
　　　　he wants someone.DAT flatter　　　but　they know　not
　　　　{*wer　　/ *wen　　/ wem}　　~~er t~~*wem* ~~schmeicheln will~~.
　　　　　who.NOM　who.ACC　who.DAT he　　flatter　　　wants
　　　　'He wants to flatter someone, but they don't know who.'

Although Ross did not note this consequence of the deletion approach, it straightforwardly predicts the P-stranding facts as well. In languages like German, which lack P-stranding, the only well-formed output of wh-movement will have the preposition pied-piped. It is the resulting structure which is subject to deletion, correctly yielding (2) as the only possible grammatical sluice.

(2)　　Anna hat　mit　jemandem gesprochen, aber ich weiß　nicht,
　　　　Anna has with someone　spoken　　　but　I　　know not
　　　　[mit　wem] ~~sie t~~*PP* ~~gesprochen hat~~.
　　　　　with who　she　　spoken　　　has

This simple fact is the single strongest possible argument for the deletion approach. As we will see, it is a major stumbling block for most other approaches.

Another fact that a deletion approach correctly predicts is that in languages with multiple wh-fronting, sluicing with more than one wh-XP remnant should be possible. One language that has multiple wh-fronting is Bulgarian, as the data in (3) and (4) show, for matrix and embedded questions, respectively (see Rudin 1985:82ff., 1988; thanks to Lily Schürcks-Grozeva and Sevdalina Dianova for judgments on the Bulgarian examples in this section).

(3)　　a.　　[$_{CP}$ Koj kogo　[$_{IP}$ e　　vidjal]]?
　　　　　　　who whom　AUX seen
　　　　　　'Who saw who?'
　　　　b.　　*Koj e vidjal kogo?

(4) a. Ne znam [$_{CP}$ koj kogo [$_{IP}$ e   vidjal]].
        not I.know   who whom   AUX seen
        'I don't know who saw who.'

    b. *Ne znam koj e vidjal kogo.

Such a language also allows multiple wh-phrases under sluicing, dubbed 'multiple sluicing' in Takahashi 1994:

(5) Njakoj   e   vidjal njakogo, no ne znam [$_{CP}$ koj kogo [$_{IP}$ e   vidjal]].
    someone AUX seen someone but not I.know   who whom   AUX seen
    'Someone saw someone, but I don't know who saw who.'

A further consequence of deletion is that if these languages show Superiority effects, and if Superiority is the result of derivational but not representational constraints, then the fact that Superiority effects are attested under sluicing as well argues that wh-movement, constrained by Superiority, has occurred, followed by deletion. The control data that show that Bulgarian exhibits Superiority effects is given in (6), from Rudin 1985:115. The corresponding sluicing case is in (7), and should be compared to its grammatical counterpart in (5).

(6) a. Koj kogo e   vidjal?
        who whom AUX seen
        'Who saw who?'

    b. * Kogo koj e vidjal?

(7) * Njakoj   e   vidjal njakogo, no ne znam   kogo koj.
       someone AUX seen somone but not I.know whom who
    ('Someone saw someone, but I don't know who saw who.')

There is, however, a serious complication in the picture: it appears that not only multiple wh-fronting languages like Bulgarian allow for multiple wh-remnants. The following data, from German, Dutch, Turkish, Greek, and Japanese respectively[1] show that this phenomenon is attested in other, non-multiple-fronting languages as well.

(8) a.   Jemand   hat was   gesehen, aber ich weiß nicht, wer was.
          someone has something seen   but I   know not   who what
          (lit.) 'Someone saw something, but I don't know who what.'

     b.   Iemand   heeft iets   gezien, maar ik weet   niet wie wat.
          someone has   something seen   but   I know not who what
          (lit.) 'Someone saw something, but I don't know who what.'

     d.   Biri   bir şey   gördü ama, kim   ne   bil-mi-yor-um.[2]
          someone something saw   but who.NOM what.ACC know-NEG-PROG-1sg
          (lit.) 'Someone saw something, but I don't know who what.'

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[1] For judgments on these and the following examples, thanks to Armin Mester (German), Hotze Rullmann (Dutch), Dilara Grate (Turkish), and Anastasia Giannakidou (Greek).

[2] The Turkish case raises numerous interesting questions that deserve further examination. Most interesting is the fact that the non-elliptical version, given in (i), requires the genitive on the embedded subject (embedded clauses in Turkish being very similar to nominalizations in many respects).

    (i) Biri   bir ş ey   gördü ama, kim-*(in) ne   gör-düg* -ünü bil-mi-yor-um.
        someone something saw   but who-GEN what see-DIK-ACC know-NEG-PROG-1sg
        'Someone saw something, but I don't know who saw what.'

This case marking cannot appear in the 'sluiced' version, however; nominative is required, as in (8d).

    (ii) * Biri   bir ş ey   gördü ama, kim-in   ne   bil-mi-yor-um.
        someone something saw   but who-GEN what know-NEG-PROG-1sg
        ('Someone saw something, but I don't know who what.')

These contrasts indicate that multiple 'sluicing' in Turkish may not be as directly related to its apparent cousins in other languages as first inspection would imply. One possibility is that the multiple sluice is actually some kind of reduced coordination. This suspicion is supported by the fact that a strong pause is required between *kim* and *ne* in (8d), and that (iii) is a possible, perhaps more natural variant.

    (iii) Biri   bir ş ey   gördü ama, kim {ve/veya} ne bil-mi-yor-um.
        someone something saw   but who and/or   what know-NEG-PROG-1sg
        (lit.) 'Someone saw something, but I don't know who and/or what.'

Cf. Lewis's (1967:73) example *neyi ve ne zaman yaptîn* (lit.) 'What and when have you done?' (i.e., 'What have you done, and when?'). See Browne 1972, Bechhofer 1976b, Giannakidou and Merchant 1998, and Merchant 1999a for related discussion.

c. Kapjos   idhe kapjon,   alla dhe ksero pjos   pjon.
    someone.NOM saw someone.ACC but not I.know who.NOM who.ACC
    (lit.) 'Someone saw someone, but I don't know who whom.'
e. Sono toki, dareka-ga   nanika-o   mise-ta.
    that time someone-NOM something-ACC showed
    Sikasi, dare-ga   nani-o   ka omoidase-nai (Nishigauchi 1998:146 (70))
    but   who-NOM what-ACC Q remember-not
    'At that moment, someone showed something (to me). (lit.) But I can't
    remember who what.'

Even in English, although the relevant construction is already somewhat marginal (though noted for example in Bolinger 1978), we do find instances of apparent 'multiple sluicing':

(9)   (?) Everyone brought something (different) to the potluck, but I couldn't tell you who what.

In the English case, though not in the languages in (8), this multiple sluicing seems restricted to environments where an appropriate pair-list reading can be generated (see the discussion in Nishigauchi 1998), i.e., one of the quantifiers in the antecedent IP must be a generator. When we have two indefinites, for example, a multiple sluice parallel to the examples in (8) is impossible: * *Someone said something, but I couldn't tell you who what*. (This is not to imply that examples parallel to (9) are ruled out in German, Dutch, Greek, Turkish, and Japanese — on the contrary, such examples are to my knowledge possible, and show interpretational restrictions reminiscent of the English facts, as noted in Nishigauchi 1998 for Japanese.)

Thus any interesting implication of the form 'multiple sluicing iff overt multiple fronting' cannot hold. Though I will have nothing more to say about the syntax of this phenomenon here, one possible interpretation is that Procrastinate can be overridden if deletion applies. (Suggesting an implementation of Procrastinate not as a global

evaluation metric, but as a local one, encoded by some feature of traces which is repaired by the deletion, along the lines discussed in chapter 2.)

In any case, the prediction with respect to Superiority can be tested in those languages that exhibit Superiority effects. The situation in German and Dutch is the subject of some controversy, making these languages less than ideal as test cases. In English and Greek, however, Superiority effects are clearly attested in the relevant simple monoclausal structures:

(10) a.   * I couldn't tell you what who brought to the potluck.
      b.   * Dhen ksero pjon   pjos   idhe.   (on non-echo reading for *pjos*)
               not   I.know who.ACC who.NOM saw
            ('I don't know whom who saw.')

Crucially, these effects are equally attested in the corresponding multiple sluicing structures:

(11) a.   * Everyone brought something (different) to the potluck, but I couldn't tell you what who.
      b.   * Kapjos   idhe kapjon,   alla dhe ksero pjon   pjos.
               someone-NOM saw someone.ACC but not I.know who.ACC who.NOM
            (lit.) 'Someone saw someone, but I don't know whom who.'

This patterning in the data is expected if Superiority is the result of a derivational constraint on wh-movement (perhaps a result of the Minimal Link Condition as in Chomsky 1995; see also Hornstein 1995 and Pesetsky 1998b for recent discussion), and if the remnant wh-phrases reach their surface position in sluicing by the application of the usual processes that drive overt wh-movement. Since they undergo wh-movement, the Superiority condition will apply, with the desired results.

Despite these successes, a serious problem remains for the deletion approach. The problem, as Ross recognized, is the apparent violation of the islands. Under his approach, examples like (12a) and (13a) have the derivations in (12b) and (13b), where wh-movement has violated the island, hidden by deletion.

(12) a. They want to hire someone who speaks a Balkan language, but I don't remember which.

b. * I don't remember which ~~(Balkan language) they want to hire someone [who speaks]~~.

(13) a. Ben will be mad if Abby talks to one of the teachers, but she couldn't remember which.

b. * Ben will be mad if Abby talks to one of the teachers, but she couldn't remember which ~~(of the teachers) Ben will be mad [if she talks to]~~.

Ross's solution to this problem was to conclude that ungrammaticality was calculated across the derivation, that is, that global rules were necessary that could inspect island violations and determine whether they had been 'repaired' by deletion (whether "the island-forming node does not appear in surface structure", p.277), in which case a lesser mark of deviance would be assigned. This conclusion is repeated in Lakoff 1970, 1972.

Besides the murkiness of such an evaluation metric —see the rebuttal in Baker and Brame 1972— there is good reason to reject this approach to the island facts on empirical grounds. As I pointed out in the Introduction, VP-deletion does not repair island violations, though the Ross approach would expect them to.

(14) [Everyone wants to hire someone who speaks a different Balkan language]
* Abby wants to hire someone who speaks Greek, but I don't remember which (language) Ben does ~~want to hire someone [who speaks]~~.

(15)   * Ben will be mad if Abby talks to Mr. Ryberg, and guess who Chuck will be ~~mad~~
        ~~[if she talks to]~~.

These examples indicate that for at least these islands, the effect is due to the crossing of an island boundary by wh-movement, regardless of whether the island-inducing node surfaces at PF. The re-analysis of these facts suggested by Chomsky 1970 and reiterated in Baker and Brame 1972 —namely that crossing an island-node marks that node with some feature (Lakoff 1972 calls it '[+bad]'), and that this feature, if not deleted, causes the ungrammaticality— fails for the same reason.

4.2   Pseudosluicing

Faced with these difficulties, it was not long before the suggestion was made to reanalyze Ross's sluicing facts as the result not of island-insensitive wh-movement, but rather as related to an entirely different, non-island-containing structure. This suggestion was made independently in both Erteschik-Shir 1977 [1974] and Pollmann 1975.

In the last footnote on the last page of her dissertation (Erteschik-Shir 1977: 107-108, fn 4), Erteschik-Shir mooted an "interesting alternative to sluicing [that] might be worth investigating", in which a sluice like (16a) would be derived from the underlying structure in (16b) by deletion of the subject *it* and the copula:

(16)   a.   Someone just left — guess who.
        b.   Someone just left — guess who ~~it was~~.

She was concerned exactly with the island-ameliorating examples that we have been discussing, and supposed that the question of such island effects becomes irrelevant if the structure of such an example (her (iii)) contains only matrix elements (*it will be*).

(17)   That he'll hire someone is possible, but I won't divulge who ?(it will be).

Precisely the same suggestion is made in Pollmann 1975, who formulates an optional transformation that deletes '[+pro, +def]$_{NP}$ + copula'[3], though he does not recognize the solution it provides to the island problem.

Neither author explicitly identifies the reduced structures posited as underlying sluices as related to the structure found in clefts, but it does not seem far-fetched to make this identification, and in fact what appears to be sluicing in Japanese has been claimed by a number of authors to derive exactly from a cleft (see Merchant 1998a for discussion and references). In other words, (16b) is itself most likely a reduced form of a cleft whose pivot is an extracted wh-phrase, as in (18a). This type of ellipsis I will call 'pseudosluicing', as it gives rise to structures seemingly indistinguishable from 'true' sluicing (wh-fragments, derived, by hypothesis, from more usual interrogative structures as in (18b)).

(18)   a.   Guess who [~~it was ___ that just left~~].   **pseudosluice**

        b.   Guess who [~~___ just left~~]   **sluice**

Both derivations, in other words, potentially give rise to the attested data. In the following sections, I develop a number of diagnostics to distinguish the two, and conclude that it is at best highly unlikely that 'sluicing' can be reduced to pseudosluicing in any interestingly general way. These sections are mostly restatements of arguments presented in Merchant 1998a, though several are new.

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[3]   Pollmann's formulation is meant to include *dat* 'that' as well as *het* 'it'. This incorrectly allows for potential reductions of the kind in (i), as pointed out by Klein 1977:71 (his (84)); similarly for the English translation.
(i)   We hebben gisteren   Pollini horen spelen. Raad eens wie *(dat is).
          we have   yesterday Pollini hear   play   guess PRT who   that is
          'We heard Pollini play yesterday. Guess who *(that is).'

4.2.1 Initial considerations

Let us begin by considering the CP portion of the pseudosluice. If the suggested reduction of 'it be XP' structures to 'it be XP that...' cleft structures is correct, we might wonder whether there is reason to believe that the presuppositional (relative-clause-like) part of a cleft could be omitted to begin with. Such 'ellipsis' would seem to be available in English as well, if the short forms of the answers below are indeed transformationally related to their non-elliptical apparent counterparts. Compare the following pairs of questions and answers.

(19)　a.　　Q: Who knocked?
　　　　　　　A: It was {Alex / me} (who knocked).
　　　　b.　　Q: What did they steal?
　　　　　　　A: It was the TV and stereo (that they stole).
　　　　c.　　Q: Why is the bus late?
　　　　　　　A: It's because of the traffic (that it's late).

In fact, sometimes the presuppositional part *must* be missing:

(20)　Q: Who's that?
　　　A: It's me (*that is that).

But even if these structures are somehow related, the nature of this 'ellipsis' is quite different from the head-licensed ellipsis generally discussed in the literature (NP-ellipsis, VP-ellipsis, IP-ellipsis), consisting as it does of a CP. There is in fact good reason to doubt that CP-ellipsis in this form exists. Let us examine the two likeliest candidates.

There are two other kinds of environments which would seem to involve missing CPs in English. The first is in comparative clauses such as (21).

(21) a. More people came than we thought (would come).

b. He's sicker than the doctor {thought/expected/realized/admitted} (that he was).

Given the perceived interpretation, and the fact that these verbs do not in general allow null complements (cf. *I didn't expect *(that)*), it seems reasonable to assume that their CP complements have been elided (perhaps via some generalized comparative deletion) in (21). But as Kennedy and Merchant 1999 show, this assumption is wrong. In fact, there is good reason to believe that the embedded verbs in (21) take DP, not CP, complements.

Several pieces of evidence point to this conclusion: here I will only mention one, relating to the fact that DPs, but not CPs, need Case. Observe that if the verbs in (21) are passivized, the examples become ungrammatical.

(22) a. *More people came than it was thought.

b. *He's sicker than it was {thought/expected/realized/admitted}.

This effect extends as well to adjectives that take CP complements:

(23) *Sally had a more serious problem than it was {evident/known/apparent}.

The ungrammaticality of these examples would be surprising if it were simply a matter of a CP being missing, all the more so given that when a CP *is* present, the examples are fine.

(24) a. More people came than it was thought would come.

b. He's sicker than it was {thought/expected/realized/admitted} that he was.

c. Sally had a more serious problem than it was {evident/known/apparent} that she had.

The contrast between the examples in (22) and (23) and those in (24) is completely surprising if the former are simply elliptical versions of the latter. Instead, Kennedy and Merchant 1999 propose that what is missing in (22) and (23) is a DP, not a CP, and that this DP, like all argument DPs, requires Case. Support for this approach is given by the fact that (22) and (23) improve if the expletive subject is omitted: this allows the DP to move into subject position, getting Case there.

(25) a. More people came than was thought.
 b. He's sicker than was {thought/expected/realized/admitted}.
 c. Sally had a more serious problem than was {evident/known/apparent}.

We can thus conclude that what appeared to be a form of CP ellipsis in comparatives does not in fact involve a CP at all.

The second environment in which a CP complement appears to be missing is as the complement to certain verbs, as in (26):

(26) a. A: They're late again. B: I know (that they're late again).
 b. A: Will she come? B: I don't know (if she'll come).

But here again it is highly unlikely that a syntactic operation of CP-ellipsis is at work. The fact that certain verbs, like *know*, *insist*, and *wonder*, can appear without a complement seems to be an idiosyncratic fact about these verbs (generally called 'Null complement anaphora', cf. Hankamer and Sag 1976, Fillmore 1986, and many others) that requires some other explanation. Note that if deletion of a complement CP were in general possible, we would need some way to prevent it from applying in cases like those in (27):

(27) a. I {regret/asserted} *(that we bought the charcoal grill).
 b. I {proposed/demanded} *(that we buy the charcoal grill).

There therefore seems to be no reason to believe that English has an independent operation of CP-ellipsis, and that, contrary to first appearances, structures of the form *It's Bob* do not represent syntactically reduced clefts.

But even if, for the sake of the argument, English *did* license ellipsis of CP, it is equally highly implausible to assume that the expletive *it* present in clefts and the copula (with concomitant modals, if present) could be missing, since these are not properties found independently in English (i.e., English is neither a *pro*-drop nor a null copula language). This difficulty was noted by Erteschik-Shir 1977, who admits tersely that "[the deletion transformation that deletes 'it + be (tensed)'] cannot occur equally well in all environments, and an investigation of the conditions on this deletion transformation is necessary" (p. 108).

What is at stake is wild overgeneration, of course. A proponent of such an approach would have to answer why 'it + be' deletion could not apply in the cases in (28), for example.

(28) a. Q: Who knocked?
          A: *(It was) {Alex / me} who knocked.
     b. Q: What did they steal?
          A: *(It was) the TV and stereo that they stole.
     c. Q: Why is the bus late?
          A: *(It's) because of the traffic that it's late.

In general, in fact, fragment answers do not have the same properties as pivots of clefts: they do not enforce exhausitivity the way the pivot of a cleft does, for example, nor do they have the same presuppositional properties. A cleft is generally assumed to have a true existential presupposition (though see Prince 1978, Delin 1992 for some caveats to this blanket claim: new information can sometimes appear in the 'presuppositional' part, especially in performatives in clefts), whereas a question is typically assumed to have a conversational implicature of existence of something that satisfies the kernel of the question (see the series of papers culminating in Karttunen and

Peters 1979). This difference is illustrated here with negative quantifiers in answers, which are well-formed, while negative quantifiers in the pivot of clefts are not (since the assertion contradicts the presupposition).

(29)   a.   Q: What did the burglar take?
               A: Nothing.
       b.   #It was nothing that the burglar took.

(30)   a.   Q: What did he do to help you?
               A: Nothing at all.
       b.   #It was nothing at all that he did to help us.

These initial considerations cast serious doubt on the plausibility of the operations necessary to produce the posited ellipsis. In the next section, I present a number of other differences that make any attempt to reduce sluicing to pseudosluicing seem unlikely, differences that would remain mysterious under such a reduction.

4.2.2   Contra the equation 'sluicing = pseudosluicing'

There are at least ten differences between sluicing and cleft questions with wh-XP pivots. My goal here is not to offer explanations or analyses of these differences — my point is served simply by showing that they exist, since their very existence makes any assimilation of sluicing to elliptical clefts problematic. These differences concern the distinct behavior of sluices and wh-pivot clefts with respect to adjuncts and implicit arguments, prosody, agressively non-D-linked wh-phrases, 'mention-some' modifiers, 'mention-all' modifiers, *else*-modification, wh-preposition inversion, languages with limited or no cleft strategies, languages with nominative pivots of clefts, and left branch sluices.

1.   *Adjuncts and implicit arguments*

The first reason to keep sluicing and clefting distinct is provided by a simple comparison of the behavior of adjuncts and implicit arguments in these two constructions. As the data in (31) for adjuncts (similar to the data given by Klein 1977:70) and that in (32) for implicit arguments show, sluicing with these is grammatical, but a wh-adjunct or implicit argument is highly degraded as the pivot of a bare cleft in English. (The cleft versions improve substantially if the presuppositional part of the cleft is retained, at the risk of prolixity. The significance of this fact is difficult to assess, however, lacking a better understanding of what makes wh-adjuncts and implicit arguments ungrammatical pivots in the first place.)

(31)   a.   He fixed the car, but I don't know how (*it was).
       b.   He fixed the car, but I don't know why (*it was).
       c.   He fixed the car, but I don't know when (*it was).
       d.   He's hidden the jewels, but I don't know where (*it is).
       e.   He served time in prison, but I don't know how long (*it was).
(32)   a.   They served the guests, but I don't know what (*it was).
       b.   He said they had already eaten, but I don't know what (*it was).
       c.   They were arguing, but I don't know about what (*it was).

2.   *Prosody*

The second difference comes from the intonational contour associated with sluicing. Standard cases of sluicing require that the greatest pitch accent fall on the wh-phrase. In wh-pivot clefts, on the other hand, the pitch accent must fall on the copula, as the following contrasts show.

(33)   Someone gave me a valentine, but
       a.   I don't know WHO.
       b.   I don't know who it WAS.
       c.   *I don't know WHO it was.

(34) a. Someone KISSED you, and you can't remember WHO?!?

    b. Someone KISSED you, and you can't remember who it WAS?!?

    c. *Someone KISSED you, and you can't remember WHO it was?!?

This is actually somewhat surprising, given that in general the pivot of a cleft must contain the pitch accent. Note that the above contrasts cannot be simply reduced to the effects of some general preference for the nuclear accent to fall at the end of the utterance, since exactly the same judgments obtain if the embedded CP is left-dislocated, for example.

3. Agressively non-D-linked wh-phrases

Agressively non-D-linked wh-phrases (as in Pesetsky 1987) generally cannot occur in sluicing[4], though they are unobjectionable as pivots of a cleft:

(35) Someone dented my car last night—

    a. I wish I knew who!

    b. I wish I knew who the hell it was!

    c. *I wish I knew who the hell!

The problem in (35c) is not with emphasis on *who the hell*, as the well-formedness of (36) demonstrates:

(36) Who the HELL do you think you are?!?

4. 'Mention-some' modification[5]

Because of the exhaustivity entailed by the pivot (see Kiss 1998), only a 'mention-all' interpretation (see Groenendijk and Stokhof 1997, sec. 6.2.3 for discussion) will be compatible with a wh-phrase in the pivot. Thus wh-pivots will be incompatible with

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[4] The one exception to this rule being in sluices with inverted prepositions, as discussed in footnote 13 of chapter 2.

modifiers like *for example*, which explicitly requires the 'mention-some' interpretation, in contrast to sluicing, which allows such modification. (37a) illustrates the contrast in embedded sluicing, and (37b) does so for a matrix sluice.

(37) A: You should talk to somebody in the legal department for help with that.

    a.   B1: Could you tell me who (*it is), for example?

    b.   B2: Who (*is it), for example?

5. *'Mention-all' modification*

The reverse argument holds for the exhaustivity enforcing wh-modifier 'all' as in *Who all was at the party?* (see McCloskey to appear). Such modification seems degraded in sluicing in some examples; crucially, this degradation does not carry over to the clefted counterpart:

(38) A bunch of students were protesting, and the FBI is trying to find out who all *(it was).

6. Else-*modification*

Likewise, the modifier *else* applied to wh-words can occur in sluicing, but not in clefts.

(39) Harry was there, but I don't know who else (*it was).

7. *Wh-preposition inversion*

A further difference between sluicing and clefts comes from a somewhat intricate set of facts concerning the ability of certain wh-words in English to invert with a selecting preposition under sluicing. This fact looks at first glance similar to West Germanic R-pronoun inversion: it is well-known that certain elements (known as 'R-pronouns' in the literature) can invert with a preposition, as illustrated in (40) and (41) for German:

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[5] Thanks to S. Tomioka for suggesting this test.

(40) a.　　?An was　　denkst du eigentlich?

　　　b.　　Wo-r-an　　denkst du eigentlich?

　　　　　　where-on　　think　you actually

　　　　　　'What are you thinking of, anyway?'

(41) a.　　?Nach was　hat es gerochen?

　　　b.　　Wonach　　hat es gerochen?

　　　　　　where-after　has it smelled

　　　　　　'What did it smell like?'

As observed in Ross 1969 and Rosen 1976, sluicing also allows a seemingly 'stranded' preposition. Van Riemsdijk 1978 and Chung et al. 1995 assimilate this inversion to R-pronoun inversion in the other West Germanic languages (see chapter 2, footnote 13).

(42) a.　　She bought a robe, but God knows who for.

　　　b.　　They were arguing, but we couldn't figure out what about.

　　　c.　　This opera was written by someone in the 19th century, but we're not sure who by. [Chung et al 1995: (4d)]

　　　d.　　He was shouting to someone, but it was impossible to tell who to.

　　　e.　　A: She's going to leave her fortune to someone. B: Really? Who to?

　　　f.　　He'll be at the Red Room, but I don't know when till.

　　　g.　　She's driving, but God knows where to.

Like R-pronoun inversion in German and Dutch, this kind of inversion under sluicing is very restricted, though somewhat more liberal than the continental varieties of the phenomenon (see Hoekstra 1995 for a survey of the various continental dialects). In English, only certain 'minimal' wh-operators can invert: *who*, *what*, *when*, and *where* (and, for some speakers, *how long*). We should note here that whatever the correct

account of this restriction, it is not simply a prosodic condition on inversion, as the following examples with *which* demonstrate.

(43)   a.   *She bought a robe for one of her nephews, but God knows which (one) for.
       b.   *They were arguing about animals, but we couldn't figure out what kind about.
       c.   *This opera was written by an Italian composer in the 19th century, but we're not sure which (one) by.
       d.   *He was shouting to one of the freshmen Republican senators supporting the bomber program, but it was impossible to tell exactly which (senator) to.
       e.   *He'll be at the Red Room, but I don't know what time till.
       f.   *She's driving, but God knows which town to.

Crucially, however, this inversion is impossible in wh-pivot clefts:

(44)   a.   It was [for Humphrey] that I voted.
       b.   [For who] was it that you voted?
       c.   *[Who for] was it (that you voted)?

(45)   a.   It was [about the election] that they were arguing.
       b.   [About what] was it that they were arguing?
       c.   *[What about] was it (that they were arguing)?

Again, this asymmetry between the behavior of wh-words in PPs under sluicing and as pivots of clefts would be unexpected if the former were simply a case of the latter.

8.   *Languages with limited or no cleft strategy*

The eighth argument comes from the fact that there are languages which either have a very limited cleft strategy, or lack any kind of cleft construction at all, but which nevertheless allow sluicing.

The first kind of language is illustrated by German, which does not allow PP pivots of clefts (among other restrictions; see Grewendorf and Poletto 1990). But of course, as we have seen above, PP wh-phrases can be remnants of sluicing, even 'into islands'.

(46)   a.   * Mit wem war es, daß er gesprochen hat?
             with who was it that he spoken has
       b.   Er hat mit jemandem gesprochen — rate mal mit wem!
             he has with someone spoken guess PRT with who
             'He spoke with someone — guess who!'

The second kind of language is represented by Romanian and Hungarian. As the following data, given in Grosu 1994:203-204 (see also Dobrovie-Sorin 1993), show, Romanian does not permit structures like the English cleft.

(47)   a.   * E Maria (ca*) vreau sa* întîlnesc.
             is Maria that want.1sg SUBJ meet.1sg
             'It's Maria that I want to meet.'
       b.   * E Ion {ce / care} a cîştigat premiul întîi.
             is Ion that/who has won prize.the first
             'It's Ion that won first prize.'
       c.   * E Ion pe care (l-) am întîlnit ieri.
             is Ion ACC who him-have.1sg met yesterday
             'It's Ion who I met yesterday.'

Whatever the explanation for this fact (Dobrovie-Sorin 1993 suggests that Romanian may lack the appropriate kind of null operator), the lack of cleft structures in this

language predicts, if the pseudosluicing hypothesis were correct, that Romanian should lack sluicing structures as well. This, however, is incorrect:

(48) a.   Vrea   sa*   întîlneasca* pe cine-va, dar nu ştiu   pe cine.
             want.3sg SUBJ meet.3sg   ACC someone but not I.know ACC who
             'She wants to meet someone, but I don't know who.'

      b.   Cine-va a   cîştigat premiul întîi — ghici cine!
             someone has won   prize.the first   guess who
             'Someone won first prize — guess who!'

      c.   Am   întîlnit pe unul diutre fraţii   ta*i, dar nu ţin   minte
             I.have met   ACC one among brothers you but not I.have memory
             pe   care.
             ACC which
             'I met one of your brothers yesterday, but I don't remember which.'

A parallel argument comes from Hungarian, which employs a preverbal position for identificational focus, but lacks the cleft construction of English. Thus (49a), modified from Kiss 1998:249 (her (8a)), corresponds to the English cleft (hence the translation), while (49b) is impossible.[6]

(49) a.   Mari a   kalapot   nézte.
             Mary the hat. ACC looked.at
             'It was the hat that Mary was looking at.'

      b.   * Volt a kalap   amit   Mari nézte.
              it.was the hat. NOM which. ACC Mary looked.at

But Hungarian does allow sluices of the relevant form:

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6 Structures like (49b) are possible, but receive an existential interpretation; the use of the definite pivot in (49b) rules out this irrelevant possibility. Thanks to G. Puskás for discussion.

(50) Mari nézett   valamit,   de nem emlékszem, mit.
Mary looked.at something. ACC but not I.remember what. ACC
'Mary was looking at something, but I don't remember what.'

9.   Languages with pivots of clefts in the nominative

The ninth argument against assimilating sluicing to cleft or cleft-like structures comes from languages like Greek, which do have both sluicing and clefts, but which also have clearly distinguishable case. In Greek, the pivot of a cleft, including wh-pivots, appears in the nominative in the environments relevant for this discussion. The case of a sluiced wh-phrase, in contrast, must match the case of its correlate (as discussed in chapter 3, §3.2.1 above). This gives rise to the contrasts seen in (51a) and (51b) (thanks to A. Giannakidou for judgments).

(51) I   astinomia anekrine   enan apo tous Kiprious prota, ala dhen ksero
the police   interrogated one$_{acc}$ *from the   Cypriots first but not   I.know*
a.   {*pjos   / pjon}.
           which$_{nom}$ *which*$_{acc}$
b.   {pjos   itan / *pjon   itan}.
           which$_{nom}$ *it.was   which*$_{acc}$ *it.was*
'The police interrogated one of the Cypriots first, but I don't know {which/ which it was}.'

A related concern comes from English, where assimilation to clefting would allow ill-formed sluices to be generated such as the following:

(52) The police said that finding someone's car took all morning, but I can't remember who *(it was).

10. *Left branch sluices*

Finally, sluices can violate certain instances of the left branch constraint, illustrated here with an attributive adjective (see chapter 5, §5.2.1 for more discussion of these cases):

(53)   He married a rich woman — wait till you hear how rich!

But these have no well-formed cleft counterparts:

(54)   a.   * How rich is it (that he married [a __ woman])?
         b.   * He married a rich woman — wait till you hear how rich it is!

4.2.3 Summary

This section has presented a number of reasons to be skeptical of any attempt to reduce sluicing in English to a kind of pseudosluicing. In addition to syntactic difficulties in accounting for the missing copula, expletive *it*, and CP, I provided evidence from adjuncts and implicit arguments, prosody, agressively non-D-linked wh-phrases, 'mention-some', 'mention-all', and *else* modifications, wh-preposition inversion, languages with limited clefts, languages with nominative cleft pivots, and left branch sluices to support the conclusion that wh-pivot clefts and sluices should be kept distinct.

4.3   Sluicing ≠ wh-Op + resumptive

This section explores the possibility of reducing the cases of sluicing which violate strong islands to cases in which a resumption strategy is employed to rescue what would otherwise be an illicit movement configuration. This approach would allow us to maintain the standard account of islands as arising through illict (syntactic) *movement* operations, since wh-operators can bind resumptive pronouns in configurations in which

movement is impossible (see McCloskey 1990 for an overview). A closer inspection of the relevant data, however, will show that this approach is untenable.

Let us first examine why a reduction of sluicing into strong islands to the mechanism used to form the operator-variable chain with resumptive elements might beattractive. Though this approach has never been explored in any detail in the literature[7], it is nevertheless suggestive, based on certain distributional parallels. Compare the following examples—the examples in (55) are standard cases of strong extraction islands, while in (56), the initial wh-operator can associate with a resumptive pronoun inside the island. For terminological ease, I will call a wh-operator which binds a resumptive pronoun a *resumptive-binding operator* (I will show below that resumptive-binding operators have a number of peculiar properties cross-linguistically that distinguish them from their more usual trace-binding counterparts). In (57), a sluiced wh-operator seemingly binds a variable in those very positions.

(55) a. * Who$_1$ did the Brazilian team improve after t$_1$ started playing for them?
      b. * What play$_2$ does he want to interview the woman who wrote t$_2$?

(56) a. Who$_1$ did the Brazilian team improve after he$_1$ started playing for them?
      b. What play$_2$ does he want to interview the woman who wrote it$_2$?

(57) a. The Brazilian team improved after somebody from Ajax started playing for them, but I can't remember who.
      b. He wants to interview the woman who wrote some play, but I can't remember what play.

The basic idea is that the sluicing examples derive not from movement variants in (55) but rather from their resumptive counterparts in (56). Since the grammar makes this strategy available in any case, the logic would go, there is no reason not to employ it

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[7] It was suggested in passing in Sauerland 1996 (pp. 307-308), who gives one example, though his main interest is elsewhere (see chapter 5, §5.5).

here. For the deletion to proceed, the parallelism condition must simply allow (variable bound by) the indefinite in the antecedent clause to be equivalent to the resumptive pronoun in the elided IP, instead of to a trace of wh-movement. As we saw in chapter 1, such a move is harmless, and necessary in any case (see chapter 5, § 5.3); such equivalencies are pervasive under ellipsis, and have been known to hold since the beginning of research on this topic, going under various names (Ross's 1967 and Bouton's 1970 sloppy identity, Fiengo and May's 1994 vehicle change).

The table below lays out this parallelism:

(58)   *Three types of Op-variable association*

	Is such an association possible across a strong island?
wh-Op and gap (trace):	No
wh-Op and resumptive pronoun:	Yes
sluiced wh-Op and 'variable':	(Apparently) yes

This parallelism, while initially attractive, unfortunately breaks down in a number of places, ultimately proving only superficial. It is the purpose of the following sections to brings these failings to light.

4.3.1 Initial considerations

To begin with, there are a number of possible wh-remnants that don't seem to have readily available resumptive strategies: *when, where*, and amount/degree *how*.[8] Though

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[8] I leave out of consideration manner *how* and *why*, since there are no simple demonstrative elements corresponding to these; this is related to the fact, often noted in the literature, that *how* and especially *why* are non-D-linked, and do not admit of an ordering relation easily (see Szabolcsi and Zwarts 1993). So while it is possible to specify a manner or reason with a wide-scope indefinite, sluicing over these indefinites requires the DPs *in what way* or *what reason*, and still does not allow *why* or, to a lesser extent, *how*, for reasons that remain unclear at present.

(i)   a.   She's practicing her serve so that she'll be able to hit the ball in a certain deadly way, but her trainer won't tell us {in what way/??how}.
       b.   He wants to interview someone who works at the soup kitchen for a certain reason, but he won't reveal yet {?what reason/*why}.

Note of course that though the expressions *(in) that way* and *for that reason* might be thought to be able to stand in as resumptives for *how* and *why* in extraction dependencies, this is impossible:

then, *there*, and *that* are in English the demonstrative equivalents to *when*, *where*, and amount/degree *how*, these elements do not generally function as resumptives (see McCloskey 1990:243 and Finer 1997:717 for recent discussion and references):

(59) a.   * Where$_1$ does he want to find a person [who camped (there$_1$)]?

      b.   * When$_2$ is she looking for journal entries [that describe a battle (then$_2$)]?

      c.   ?? How much (weight)$_3$ did he promise to work out [until he lost (that much$_3$)]?

Nevertheless, if the correlate makes a wide-scope place, time, or amount variable available, as in (60), 'island-insensitive' *when*, *where*, and *how much* are possible:

(60) a.   He wants to find a person who has lived somewhere specific in the Pacific, but I can't remember where.

      b.   She is looking for journal entires that describe a battle {at a certain time/in a certain year}, but I don't remember when.

      c.   He promised to work out until he lost a certain number of pounds, but I don't remember how much.

This line of reasoning is corroborated by Irish, which, although it has available an extremely productive resumptive strategy, nevertheless lacks resumptives corresponding to *then* and *there* (McCloskey 1990: 243 fn.10). If such elements are generally absent from the repertoire of resumptive elements (presumably for type reasons: resumptive elements seem only to be of type <e>), it would be surprising to imagine that they are in fact possible, but only as null resumptives in sluicing.[9]

(ii)   a.   * How$_4$ did she practice her serve so much that she could hit the ball (that way$_4$)?
       b.   * Why$_5$ did you interview someone who quit the Red Cross (for that reason$_5$)?
       Of course, 'non-island violating' sluices with *how* and *why* are fine.

[9] There are some instances of locative resumptives cited in the literature: Suñer 1998 gives examples from Spanish and Australian English in restrictive relatives, and Prince 1990 gives examples in such relatives as well (see also Bissell 1999). Wahba 1984:13-14 gives examples of resumptive locatives in topicalizations in Egyptian Arabic, and discusses the fact that, although these resumptives are impossible in non-island contexts (only a gap may appear), one may appear in an island. Crucially, none of these involve wh-questions (in Egyptian Arabic, questioning locatives out of islands involves

Irish would also be a natural language to examine in general to see whether or not sluicing (at the very least the apparently island-insensitive variety) makes use of a resumptive strategy, since it marks the presence of the resumptive not only in the base-position, as in English, but also on the complementizer (see McCloskey 1979, 1990). Unfortunately for the purposes of conducting this test, as discussed in chapter 2, § 2.2.2.2, sluicing never allows for the presence of a complementizer co-occuring with the wh-remnant, as in (61), repeated from chapter 2:(103). Here, the relevant data would come from the (affirmative) past tense, since in the present the mutation on the verb following the complementizer (lenition for the complementizer that co-occurs with traces, glossed as C_{trace}, nasalization for the resumptive complementizer, glossed as C_{pro}) is the only signal of which complementizer we are dealing with, and of course in sluicing, the relevant verb is not pronounced. In the past, however, the resumptive complementizer is realized as *ar*, while the trace complementizer is *a* (see McCloskey 1979:11).

(61)   Cheannaigh sé leabhar inteacht ach níl   fhios   agam céacu ceann (*a / *ar).
       bought   he book   some   but not.is knowledge at.me which one C_{trace} / C_{pro}
       'He bought a book, but I don't know which.'

Irish does however provide an argument against assimilating all kinds of sluicing to resumptive behavior. This argument is based on the fact that no resumptive element can occur as the highest subject in the clause (McCloskey 1979, 1990:210) (the same restriction holds in Hebrew and Arabic, and the sluicing data in those languages is parallel to that given here for Irish).

(62)   *an fear a   raibh   sé breoite
        the man C_{pro} be.PAST he ill
        lit. 'the man that he was ill'

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the wh-in-situ strategy; see Wahba 1984:118-126), which would be required if the sluicing examples were to be reduced to resumptives. Interestingly, temporal resumptives seem to be absent even from restrictive relatives.

If sluicing structures were only the result of resumptive strategies, we would expect Irish not to allow sluices over the highest subject. But of course such sluices are perfectly well-formed (J. McCloskey, p.c.):

(63)   Tá   duine   inteacht breoite, ach níl   fhios   agam   cé.
       be-PRES   person some   ill   but not.is knowledge at.me who
       'Somebody is ill, but I don't know who.'

4.3.2   Resumptivity and case

Another important argument against the resumptive strategy comes from case-marking languages. I will illustrate here with examples from the genitive case in English, and other cases below in German, Russian, Polish, Czech, and Greek. The basic point of the argument is simple: while moved wh-phrases always take their case from their base position, wh-phrases linked to resumptives need not do so, and in general cannot, appearing instead in some default case if possible. If the remnant wh-phrase in sluicing were binding a resumptive element, we would expect the case of this wh-phrase to be the default case associated with resumptive-binding wh-phrases in general. If, on the other hand, the wh-phrase were actually the product of movement as in regular trace-binding configurations, the contextually appropriate case is to be expected. As I will show, the facts show the latter to be the case. In fact, some of these languages make the point even more clearly: it appears that with a wide variety of wh-phrases, there is simply no resumptivity strategy available at all. These same wh-phrases can, however, perfectly well appear in sluicing. Whether this lack of resumptivity is a systemic property of the languages in question or not (which is a separate question, addressed in the following section), even a single non-equivalency between the range of wh-operators available to sluicing and those availabile as resumptive-binding operators makes a reduction of the former to the latter dubious.

It has been known since Ross 1969 that case-matching effects hold in sluicing, as we saw above in chapters 2 and 3. But the cases discussed in chapter 2, and throughout the literature, represent examples where the case-marked wh-phrase does not originate in a strong island (indeed, only monoclausal examples have ever been discussed for case-marking languages), and hence might be argued not to bear on the point at hand. Since in none of these cases do we have a strong island interior to the sluice, an advocate of the deletion + resumptivity approach might reasonably argue that these non-island cases involve simple movement followed by deletion, with no resumptive strategy necessary. It is only for the cases where the sluiced wh-phrase must apparently originate within a strong island that the resumptivity strategy must be called upon to save the deletion analysis, assuming that island constraints hold of movement in general. That is, we wish to reduce island-violating cases of sluicing to base-generation of the wh-phrase in SpecCP and concomitant deletion of the IP that contains both the island and the resumptive element bound by the base-generated wh-operator.

4.3.2.1   *English*

In order to test this hypothesis against the case-marking facts, we must look at sluicing out of strong islands, as we saw in chapter 3, §3.2.1. For ease of illustration, I begin with the one remnant of case left in the English wh-system, the genitive *whose*.[10,11] Sluicing

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[10]   I disregard the direct object *whom*, which has been completely lost from (at least) American English dialects—this form is extremely prescriptive and must be thought of on a par with such extra-grammatical epiphenomena such as the injunction not to 'split infinitives', i.e., not to insert adverbials between *to* and following verb, as in *to boldly go*, etc. Such prescriptive elements show vanishingly little about the underlying structure of the system; rather, they reflect conscious modifications of the system which can be brought about, similar to deliberately speaking with a lisp or the like. While such modifications are presumably constrained in a general way by underlying grammatical principles, I do not believe that any judgments about such data are at all reliable, and will henceforth ignore them in what follows.

[11]   I am ignoring the question of whether *whose* is truly the morphologically case-marked genitive of *who*, or simply *who* with the *'s* in D°. The evidence bearing on this question is equivocal; the question essentially reduces to the question whether *whose* should be assimilated to other case-marked pronouns like *his*, *its*, etc., or to phrasal genitives like *who the hell's* (thanks to J. McCloskey for this example). If the latter, then the examples in the text illustrate the lack of pied-piping with resumptive-binding operators; if the former, then they show the lack of case-marking on resumptive-binding operators (if this does not in fact reduce to the ban on pied-piping). None of these questions arise with the data from the variety of other languages discussed below.

of *whose* out of an island is possible, as shown in (64) for the subject island (in addition to being a left-branch violation):

(64) The police said that finding someone's car took all morning, but I can't remember
   a.   whose.
   b.   *who.

Crucially, when a resumptive strategy is used, only the bare wh-operator *who* is possible, as in (65a), not the case-marked *whose* which agrees in case with the genitive resumptive pronoun *his* that it binds in (65b). ((65b) is equally bad without the resumptive *his*, being additionally a left-branch violation.)

(65) a.   Who$_1$ did the police say that finding his$_1$ car took all morning?
      b.   * Whose$_1$ did the police say that finding (his$_1$) car took all morning?

This is precisely the opposite of the data in (64), of course. If the grammaticality of the sluice in (64a) were to be reduced to a resumptive source, we would expect just the opposite judgments, parallel to the judgments on the resumptives themselves in (65).[12]

These data are made slightly less transparent by the fact that *whose* in English licenses an elliptical NP complement, as in (66):

(66) Abby's car is parked in the driveway, but whose is parked on the lawn?

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[12] Similar facts were noted in Grosu 1981:25, who gives the following example, in arguing against a copying (movement) analysis for 'non-standard relative clause constructions':
   (i)   The man {who/*whom/*whose} I told you that his pants are always wet has been
         arrested by the police.
He proposes to account for this in relative clauses by analyzing 'who' in (i) not as a relative pronoun but as a base-generated complementizer. While such an account may work in relative clauses, it is unclear how it would extend to the parallel data in interrogatives discussed in the text.

We can assume that this *whose* has the structure [DP whose [NP e]], without going into details of the NP-ellipsis involved (see Lobeck 1995, Kester 1996). It is quite possible in fact that the sluicing in (64a) hides an elliptical NP, and does not in fact represent a true left-branch extraction at all (see chapter 5 for the case of attributive adjective sluices). Even if this is the case, however, it does not affect the force of the comparison between (64) and (65): the fact that (64b) is impossible while (65a) is fine already destroys any biconditional relationship between the availability of a resumptive strategy and the possibility of sluicing. This pair shows that there are cases where a resumptive strategy is available to void a strong island, yet the corresponding sluice remains ungrammatical. In fact, a resumptive strategy utilizing a complex operator like *whose car* or, to make the parallel complete, [DP whose [NP e]], is itself ungrammatical:

(67) a. *?[Whose car]$_2$ did the police say that finding it$_2$ took all morning?
      b. * I know that the police said they found Ben's car right away, but
          [whose *e*]$_2$ did they say that finding it$_2$ took all morning?

Thus no objection to the contrasts in (64) and (65) can be constructed on the basis of the elliptical form [DP whose [NP e]]. If such a form were all that is responsible for the grammaticality of (64a), the fact that the resumptive strategies in (67) are not possible would remain completely mysterious.

This discussion of the differences between *whose* and *who* in sluicing over genitives, and of the contrasts in (67), has raised another interesting point, namely that complex operators cannot bind resumptive pronouns. For example, resumptive-binding operators in English may not pied-pipe prepositional phrases—the resumptive-binding operator must be bare.[13]

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[13] The inability of resumptive-binding operators to pied-pipe (both specifier and P-pied-piping) seems to be a quite general property across languages; see discussion below and in Merchant 1999c. Indeed, complex operators of any type are disallowed with resumptives; since pied-piping in questions (and hence in sluicing) is quite limited, this won't be a point of divergence here, but it can be clearly seen in relative clauses, where, although pied-piping is more free, such pied-piping is impossible with resumptives:
        (i)   a.   the president, a biography of whom she wrote __ last year

(68) a. (*For) which candidate$_2$ did they receive reports that more than 60% of eligible voters were planning to vote for him$_2$?

b. Lincoln was the candidate {who$_2$/ Op$_2$ that/ *for whom$_2$} they received reports that more than 60% of eligible voters were planning to vote for him$_2$.

(69) a. (*Against) what measure$_3$ did they elect a candidate who made it clear that she was against it$_3$?

b. Proposition 209 was the measure {?which$_3$/Op$_3$ that/ *against which$_3$} they elected a candidate who had made it clear that she was against it$_3$.

In contrast, sluicing with prepositional phrases, either with or without an island intervening, seems odd only to the general extent that pied-piping of prepositions in standard American English is odd across the board (see discussion in McDaniel et al. 1998). I mark such forms with ® to indicate that they are restricted to a formal register.

(70) a. ® For which candidate were more than 60% of eligible voters planning to vote?

b. More than 60% of eligible voters were planning to vote for one of the Red candidates, but I don't remember (® for) which.

c. They received reports that more than 60% of eligible voters were planning to vote for one of the Red candidates, but I don't remember (® for) which.

We can avoid the vagaries of case and prepositional phrase pied-piping in English by turning our attention to languages with robust case systems like German, Russian, Polish, Czech, and Greek.

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b. * the president, a biography of whom he's married to the professor who wrote (it) last year

This may be accounted for if all resumptives are in fact bound by null operators. Such null operators will have to be identified (à la *pro*; see Browning 1987, Grosu 1994), but when the wh-phrase with the

4.3.2.2   German

German[14] has four cases: nominative, accusative, dative, and genitive, which it marks in various ways throughout all nominal and adjectival categories, in particular on interrogative pronouns and the interrogative determiner, which will be relevant to us here for sluicing. The paradigm for the first of these is given below (the paradigm for the determiner *welcher* 'which' is similar, though it also inflects for number and gender):

(71)   Declension of German interrogative pronoun *wer* 'who'

     nom   wer
     acc   wen
     dat   wem
     gen   wessen

Recall from chapter 3, §3.2.1 that the case of a sluiced wh-phrase in German, even across a strong island, must bear the case which its antecedent bears, if it has one. This fact led to the formulation of the first form-identity generalization, repeated here as (72):

(72)   *Form-identity generalization I: Case-matching*
    The sluiced wh-phrase must bear the case that its correlate bears.

The account which reduces sluicing to resumptivity makes a direct prediction from this generalization: the case of the resumptive-binding operator should match the case of the resumptive pronoun it binds. This, presumably, is because the ellipsis is sensitive to the equivalency between the (case of the) correlate in the source clause and the (case of the) resumptive pronoun in the target (elliptical) clause.
    This prediction, however, is false:

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identifying phi-features is embedded, the null operator will fail to be licensed. Exactly how this would extend to questions in English must be left open at this point.
[14] Thanks to H. Rott and especially S. Winkler for patient judgments on the many examples in this section.

(73) * {Welchem Gefangenen$_1$ / wem$_1$}   will   sie jemanden finden, der ihm$_1$
      which.DAT prisoner   / who.DAT wants she someone find   who him.DAT
      geholfen hat?
      helped   has
      ('{Which prisoner / who} does she want to find someone who helped him?')

(74) * {Welchen   Gefangenen$_2$ / wen$_2$}   will   sie jemanden finden, der ihn$_2$
      which.ACC prisoner   / who.ACC wants she someone find   who him.ACC
      gesehen hat?
      seen   has
      ('{Which prisoner / who} does she want to find someone who saw him?')

In these examples, although the case of the resumptive-binding operator matches the case of the resumptive pronoun, the sentences are ungrammatical.[15] Compare, on the other hand, the grammatical sluices from chapter 3, (18) and (19), repeated here:

(75) Sie will   jemanden finden, der einem   der   Gefangenen geholfen hat, aber
      she wants someone find   who one.DAT of.the prisoners   helped   has but
      ich weiß nicht, {*welcher   / *welchen   / welchem}.
      I know not   which.NOM / which.ACC / which.DAT
      'She wants to find someone who helped one of the hostages, but I don't know which.'

(76) Sie will   jemanden finden, der einen   der   Gefangenen gesehen hat, aber
      she wants someone find   who one.ACC of.the prisoners   seen   has but

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[15] Similarly in relative clauses, though these are less important for our present purposes. German has no null operator (i.e. 'that'-) relatives, allowing only the case-marked relative pronoun (*der*, *das*, *die*, *die*, etc.). With these, no resumptive is possible:
    (i) * Peter is der Gefangene, dem$_1$ sie jemanden finden will, der ihm$_1$ geholfen hat.
       Peter is the prisoner   who.DAT she someone find   wants who him.DAT helped   has
       ('Peter is the prisoner that she wants to find someone who helped him.')
    (ii) * Peter is der Gefangene, den$_1$ sie jemanden finden will, der ihn$_1$ gesehen hat.
       Peter is the prisoner   who.ACC she someone find   wants who him.ACC seen   has
       ('Peter is the prisoner that she wants to find someone who saw him.')

ich weiß nicht, {*welcher   / welchen   / *welchem}.

I   know not   which.NOM / which.ACC / which.DAT

'She wants to find someone who helped one of the hostages, but I don't know which.'

The contrasts between these two sets of data —the ungrammatical resumptive strategies in (73) and (74) on the one hand, and the grammatical sluices of (75) and (76) on the other— are an insurmountable problem for the resumptivity approach to sluicing.

The following data illustrate this restriction on case-matching on the resumptive-binding operator in adjunct islands as well.

(77)   * Mit welchem   Lehrer$_1$ wird Anke sich ärgern, wenn Peter mit   ihm$_1$[16]

   with which.DAT teacher will Anke REFL upset   if   Peter with him.DAT

spricht?

speaks

* Welchem   Lehrer$_1$ wird Anke sich ärgern, wenn Peter mit   ihm$_1$ spricht?

which.DAT teacher will Anke REFL upset   if   Peter with him.DAT speaks

'Who will Anke get upset if Peter talks to him?'

(78)   * Wen$_2$ glaubst du, daß Italien besser spielt, seitdem sie ihn$_2$ in der

   who.ACC think   you that Italy   better plays since   they him.ACC in the

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[16]   I use the regular dative pronoun *ihm* here, taken from the set of unreduced frontable pronouns in German. There is also a set of demonstrative ('deictic') pronouns in German, whose forms coincide with those of the relative operator, and which are known in the literature as 'd-pronouns'. Though these are often fronted, they can occur in situ, and in particular in contexts like the one discussed in the text, as in (i).

   (i)   Anke wird sich ärgern, wenn Peter mit dem   spricht.
         Anke will REFL upset   if   Peter with demonstrative.DAT speaks
         'Anke will get upset, if Peter talks to that {one/guy}.'

Though these might be thought to make better resumptive elements than the simple pronoun series, this is not the case — (iia,b) have the same status as (77):

   (ii)   a.   * Welchem Lehrer$_1$ wird Anke sich ärgern, wenn Peter mit dem$_1$ spricht?
           b.   * Mit welchem Lehrer$_1$ wird Anke sich ärgern, wenn Peter mit dem$_1$ spricht?

I have systematically tested d-pronouns as resumptives alongside their simple counterparts, though the data given in the text are limited to the latter. Because reporting all of these additional data would not add to the argument and would make for tiresome reading, I omit them here, since they pattern without exception with their simple pronominal brethren.

Mannschaft haben?

team   have

'Who do you think that Italy has been playing better since they have him on their team?'

Again, though, parallel sluicing examples are possible (modulo the necessary PP in (79), as discussed in chapter 3, §3.2.2 above):

(79) Anke wird sich ärgern, wenn Peter mit einem   der   Lehrer   spricht, aber ich
      Anke will REFL upset   if   Peter with one.DAT of.the teachers speaks but   I
      weiß nicht mehr, mit welchem.
      know no   longer with which.DAT
      'Anke will get upset if Peter talks to one of the teachers, but I don't remember which.'

(80) Er glaubt, daß Italien besser spielt, seitdem sie einen   von   Ajax in der
      he thinks that Italy   better plays since   they one.ACC from Ajax in the
      Mannschaft haben, aber ich weiß   nicht mehr,   wen.
      team   have   but I   know no   longer who.ACC
      'He thinks that Italy is playing better now that they have someone from Ajax on their team, but I don't remember who.'

These non-parallels show that an account that reduces sluicing out of islands to resumptivity fails: such a reduction cannot generate the grammatical case-matching wh-operators in the grammatical sluices. In fact, standard German seems not to possess the kind of resumptive strategy familiar from English ('intrusive' resumptives) at all, regardless of the case of the resumptive-binding operator. In particular, no 'default' case strategy appears to be available, taking nominative to be the default (as appears in hanging topic left dislocation structures, for example; see Vat 1981 and van Riemsdijk 1997, and cf. Maling and Sprouse's 1995 discussion). This is illustrated in the following

examples, for relative clause islands in (81) and (82), and for adjunct islands in (83) and (84).

(81)   * {Welcher   Gefangene / wer}   will   sie jemanden finden, der ihm
         which.NOM prisoner   / who.NOM wants she someone find   who him.DAT
       geholfen hat?
       helped   has
       ('{Which prisoner / who} does she want to find someone who helped him?')

(82)   * {Welcher   Gefangene / wer}   will   sie jemanden finden, der ihn
         which.NOM prisoner   / who.NOM wants she someone find   who him.ACC
       gesehen hat?
       seen   has
       ('{Which prisoner / who} does she want to find someone who saw him?')

(83)   * {Welcher   Lehrer / wer}   wird Anke sich   ärgern, wenn Peter mit
         which.NOM teacher / who.NOM will Anke REFL upset   if   Peter with
       ihm   spricht?
       him.DAT speaks
       ('Who will Anke get upset if Peter talks to him?')

(84)   * Wer   glaubst du, daß Italien besser spielt, seitdem sie   ihn   in der
         who.NOM think   you that Italy   better plays since   they him.ACC in the
       Mannschaft haben?
       team   have
       ('Who do you think that Italy has been playing better since they got him on their team?')

For completeness, I should note that resumptivity is equally impossible if the resumptive pronoun is nominative, making case-matching requirements and 'default' case indistinguishable in any case:

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(85)　　 * {Welcher Gefangene / wer}　　　　will　　sie jemanden finden, dem er

　　　　　which.NOM prisoner / who.NOM wants she someone find　　who he.NOM

　　　　geholfen hat?

　　　　helped　　has

　　　　('{Which prisoner$_2$ / who$_2$} does she want to find someone who he$_2$ helped?')

(86)　　 * Wer　　　　glaubst du, daß Italien besser spielt, seitdem er　　　in der Mannschaft ist?

　　　　　who.NOM think you that Italy　better　plays since　he.NOM in the team　　　is

　　　　('Who do you think that Italy has been playing better since he's been on the

　　　　team?')

　　　　Particularly striking is the ungrammaticality of the following examples, where the
resumptive-binding operator is the R-pronoun wh-operator *wo* (here glossed 'what' for
convenience) which has sometimes been argued not to need any case at all (as an
adverbial: Trissler 1993, Müller 1995).　In (87a) the (attempted) resumptive element is
the [-wh] R-pronoun *da*, glossed 'that'.

(87)　　 a.　 * Wo$_1$ glaubst du, wären　　alle　　　glücklich, wenn Peter da$_1$mit　aufhörte?

　　　　　　　 what think　you would.be everyone happy　　if　　Peter that-with stopped

　　　　　 ('What do you think that everybody would be happy if Peter stopped doing

　　　　　　 it?')

　　　　 b.　 * Wo$_2$　glaubst du, wären　　alle　　　glücklich, wenn Peter das$_2$ tun würde?

　　　　　　　 what think　you would.be everyone happy　　if　　Peter that do would

　　　　　 ('What do you think that everybody would be happy if Peter would do it?')

Bayer 1996 uses the island-sensitivity of data like these to argue that the operator *wo* in
fact orginates in the PP in examples like (87a)[17], a conclusion shared by Hoekstra 1995.
Crucially, Bayer argues (citing Wiltschko 1993, contra Müller and Trissler), that the

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[17]　He actually argues that the combinations *wo ... da* are impossible, ruled out by a featural
mismatch [+wh] *wo* vs. [-wh] *da*. While doubling is certainly better with *da ... da*, and much rarer
with *wo ... da*, the latter is at least marginally possible, at least with the reduced *d(r)*; Oppenrieder
1991 gives several examples, as well as Trissler 1993:265: *Wo hast du dich den ganzen Tag drauf
gefreut?* (lit. 'What have you been looking forward to it the whole day?').

elements *wo* and *da* must have case. This seems a reasonable conclusion, and fits in with the picture of resumptivity in German that emerges above.[18]

In short, standard German, while possessing a familiar range of sluicing across strong islands, appears to have no resumptive strategy available at all. Obviously, any account which attempts to reduce the former to the latter is doomed to failure.

4.3.2.3   Slavic

The Slavic languages are another case in point. I begin with Russian[19], which, like German, possesses a rich case system, having six cases to German's four. (88) gives the paradigm for *kto* 'who'; the paradigms for the interrogative *c&to* 'what' and the interrogative determiner and relative pronoun *ktoroij* 'which' are similar.

(88)   Declension of Russian interrogative pronoun *kto* 'who'

> *nom*   kto
> *acc*   kogo
> *dat*   komu
> *gen*   kogo
> *instr*   kem
> *loc*   kom

Also like German, it allows for sluicing across strong islands, subject to the first form-identity generalization, given in (72). The third relevant point of similarity is that the operators in (88) cannot bind resumptive pronouns, as the following data illustrate.

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[18] Here the standard German *wo* (which is an XP) differs from the Swiss German *wo* found in relatives, which is a realization of C (see also Bayer 1984 for arguments for this from the Bavarian relativizer *wo*). This *wo* can co-occur with resumptives, as the following data, reported in Demirdache 1991:21 (citing a 1988 unpublished ms. by van Riemsdijk), show:
> (i)   de vrund wo ich immer mit em gang go suufle
>   *the friend that I   always with him go   go drink*
>   'the friend that I always go drinking with'
> (ii)   s   auto wo du   gsäit häsch das es sich de Peter nod chönti läischte
>   *the car   that you said   have that it REFL the Peter not could   afford*
>   'the car that you said that Peter couldn't afford'
This strategy is also found in spoken American English, as in the following attested example:
> (iii)   I've had dreams where he's been in them. [TV interview, *Entertainment Tonight* 1
>   Jan. 1999]
[19] Thanks to S. Avrutin for judgments on the examples in this section.

(89)	a.	* Kogo	ty	dumaes&' italjancy stali	lus&c&e posle togo kak oni
		who.ACC you think	*Italian became better after that how they*
		vkluc&ili (ego) v komandu?
		*put	him in team*

	b.	* Kto	ty	dumaes&' italjancy stali	lus&c&e posle togo kak oni
		who.NOM you think	*Italians became better after that how they*
		vkluc&ili (ego) v komandu?
		*put	him in team*
		('Who₃ do you think that the Italians became better since they put him₃ on
		the team?')

(90)	a.	* Kto	ty	dumaes&' italjancy stali	lus&c&e posle togo kak (on)
	v
		*who.NOM you think	Italians became better after that how he in*
		komandu?
		team
		('Who₃ do you think that the Italians became better now that he₃ is on the
		team?')

	b.	* C&to	ty	dumaes&' italjancy stali	lus&c&e posle togo kak
oni
		*what.NOM/ACC you think	Italians became better after that how they*
		uvideli (èto)?
		*saw	it*
		('What₂ do you think that the Italians became better since they saw it₂?')

	c.	* Kakuju p'esu	Ivan xoc&et vstretit' z&ens&c&inu kotoraja napisala
	(eë)?
		*which play.ACC Ivan wants meet	woman	who	wrote	it*

	d.	* Kakaja p'esa	Ivan xoc&et vstretit' z&ens&c&inu kotoraja napisala
	(eë)?

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> *which play.NOM Ivan wants meet woman who wrote it*
> ('What play$_2$ does Ivan want to meet the woman who wrote it$_2$?')

The same facts hold in Polish, though I will not illustrate them all (thanks to D. Mokrosinska for judgments). Like Russian, Polish has six cases, marks its wh-operators for these cases, allows sluicing across islands with case-matching, but does not permit case-marked wh-operators to function as resumptive-binding operators. Only the final property, of interest here, is illustrated:

(91) * Która sztuce¢   on chce rozmawiac! z kobieta¢ która (ja¢)   napisal›a?
      which play.ACC he wants to.talk   to woman who   it.ACC wrote
      * Która sztuca   on chce rozmawiac! z kobieta¢ która (ja¢)   napisal›a?
      which play.NOM he wants to.talk   to woman who   it.ACC wrote
      ('What play$_2$ does he want to talk to the woman who wrote it$_2$?')

Like Polish and Russian, Czech also has six cases (thanks to A. Pilátová for judgments). Although case-matched sluices are required, as illustrated in (92), no resumptive strategy is possible, as shown by (93).

(92) Chce   mluvit s   tou z&enou, která napsala ne&jakou   hru,   ale
      wants.3sg to.talk with the woman who wrote   some.ACC play.ACC but
      nemohu   si   vzpomenout, {kterou   / *ktera}.
      NEG.can.1sg REFL recall   which.ACC / which.NOM
      'He wants to talk to the woman who wrote some play, but I can't remember which.'

(93) * {Kterou   hru   / ktera   hra   } chce   mluvit s   tou
         which.ACC play.ACC / which.NOM play.NOM wants.3sg talk   with the
      z&enou, která napsala (tu) ?
      woman who wrote   it.ACC

('Which play does he want to talk to the woman who wrote it?')

4.3.2.4   Greek

Greek[20] provides yet further evidence along these lines. It has three cases of interest: nominative, accusative, genitive (the vocative does not occur on wh-operators for obvious reasons). These are marked on the interrogative pronoun/determiner *pjos* 'who, which' as follows (I give only the masculine form here): nominative *pjos*, accusative *pjon*, genitive *pjanou* or *tinos*. None of these can occur as resumptive-binding operators — neither the case-matching (a) examples are possible, nor the (b) examples with the resumptive-binding operator in the 'default' nominative.

(94) a.   * Pjon$_1$ psaxnun enan giatro pu na   (ton$_1$) voithisi?
             who.ACC they.seek a   doctor that SUBJ him   helps
      b.   * Pjos$_2$ psaxnun enan giatro pu na   (ton$_2$) voithisi?
             who.NOM they.seek a   doctor that SUBJ him   helps
             ('Who are they looking for a doctor who can help him?')

(95) a.   * { Pjanou$_1$ / tinos$_1$ }   ipe i   astonomia oti to na   vroune   to
                who.GEN who.GEN said the police   that the SUBJ they.find the
             aftokinito (tou$_1$) dhiirkese olo to proi?
             car   his   took   all the morning
      b.   * Pjos$_2$ ipe i   astonomia oti to   na   vroune   to aftokinito (tou$_2$)
                who.NOM said the police   that the SUBJ they.find the car   his
             dhiirkese olo to proi?
             took   all the morning
             ('Who did the police say that finding his car took all morning?')

But of course sluices comparable to these do show case-matching effects in accordance with the generalization in (72):

(96)   Psaxnun enan giatro pu na   voithisi kapjon,   alla dhen ksero {pjon   /
       they.seek a   doctor that SUBJ helps   someone.ACC but not   I.know who.ACC
       *pjos}.
       who.NOM
       'They're looking for a doctor to help someone, but I don't know who.'

(97)   I   astinomia ipe   oti   to   na   vroune   to   aftokinito enos   apo tous ipoptous
       the police   said that the SUBJ they.find the car   of.one from the suspects
       dhiirkese olo to proi,   alla dhen thimame   {pjanou   / tinos   / *pjos}.
       took   all the morning but not   I.remember who.GEN who.GEN who.NOM
       'The police said that finding the car of one of the suspects took all morning, but I don't remember which one's.'

4.3.3   Conclusions

The collective force of the data from these languages, then, is to put a nail in the coffin of any hope that sluicing could be reduced to a resumptivity strategy in any sufficiently general way. If these languages simply lack resumptives altogether (as proposed, for example, for West Flemish and Dutch by Hoekstra 1995), then, by this token, they should lack sluicing, contrary to fact.

In particular, the simple picture of the table in (58) above based on apparent island sensitivity has proven to be inadequate; the full picture is represented by the following table:

(98)   *Three types of Op-variable association*

	Association possible across a strong island?	Form-identity effects?
wh-Op and gap (trace):	No	Yes
wh-Op and resumptive pronoun:	Yes	No
sluiced wh-Op and 'variable':	(Apparently) yes	Yes

This suffices to establish the main point of this section, namely that sluicing (especially into islands) cannot in general be reduced to the binding of resumptive elements. (This conclusion is supported by the interpretation of the wh-phrase in sluicing, i.e. the fact that functional readings are still available, which is not the case with resumptives; see Doron 1982 and Sells 1984.)

The data we've examined here, as well as additional data from ten other languages, discussed in Merchant 1999b,c, lead to the formulation of a very general principle, stated in (99):

(99)   *Case and resumptive-binding operator generalization*
        No resumptive-binding operator can be case-marked.

This follows directly if resumptive-binding operators are base-generated in SpecCP, and can never check their Case features. Note that this is meant to apply especially to operators that are separated from the resumptive pronouns they bind by an island: when no island intervenes, languages differ in whether the resumptive element is actually the spell-out of the trace of movement or not (see Aoun and Benmamoun 1998 for a recent discussion). The fact that (99) holds, at least for binding into islands, supports several strands of evidence that resumptive pronouns inside islands are *not* related to the operators that bind them by movement (*pace* Pesetsky 1998a, for example).

The most important point for the purposes of the investigation of sluicing is that the fact that (99) holds rules out using resumptivity as a possible fix for the apparent island-insensitivities documented in chapter 3.

4.4   Chung et al. 1995: IP copy, merger, and sprouting

To deal with the problem of island insensitivity, Chung et al. 1995 [CLM] propose that the ellipsis in sluicing is not the result of PF-deletion. Instead, following Chao 1987, Lobeck 1995, and others, they posit an empty IP category in the syntax, as in (100), with the wh-XP base-generated in SpecCP:

(100) Someone called, but I don't know [$_{CP}$ who [$_{IP}$ e]]   Spell-out

        In order for interpretation to proceed at LF, however, this empty category must be replaced by a syntactic constituent of the appropriate type (namely an IP). This copying operation is a structural isomorphism condition, applied at LF, implemented by copying phrase-markers. As such, almost all the problems noted in chapter 1 for such a structural isomorphism account will plague CLM's. The one exception is the case of non-overt correlates, for which they propose a novel LF structure-building operation they dub 'sprouting'; we will return to this below. Let us first examine how their account works on the example in (100).

        In this example, the first IP can serve as the antecedent to the ellipsis, and can be copied in for e in the second clause, yielding (101) (I use boldface to indicate LF-copied material):

(101)   ... but I don't know know [$_{CP}$ who [$_{IP}$ **someone called**]]   After IP-copy at LF

        CLM follow Kamp 1981 and Heim 1982 in assuming that indefinites are not quantificational but rather simply provide a variable (with a descriptive content), which is bound by a separate operation of existential closure that can apply at different points in the structure, deriving the variable scope of indefinites[21]. With this view, the copied indefinite in (101) is free to be bound by the existential operator which binds the

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[21] The CLM account can also be cast in a theory using choice functions for the interpretation of indefintes, as shown in Reinhart 1995.

variable introduced by the wh-phrase in SpecCP (similarly an indefinite), a process CLM call 'merger'. They represent merger as co-superscripting at LF; the LF output of merger in (102a) will then yield the desired Karttunen-style interpretation for the embedded question in (102b) by standard techniques.

(102) a.   ... [$_{CP}$ who^x [$_{IP}$ **someone^x called**]]   After merger at LF

  b.   ... p[x.**person**(x,w$_o$)   p(w$_o$)   p = w.**call**(x,w)]

In doing this, CLM make the grammaticality of sluicing dependent on the availability of an unbound variable (usually supplied by an indefinite) in the copied IP. If no such variable can be found (for example, if no indefinite is present, or if the indefinite has been existentially closed within the IP, as is the case with narrow-scope indefinites, negative polarity items, etc.), sluicing will fail. CLM thus correctly predict that sluicing will always require a wide scope reading for the correlate in its own clause, deriving the scopal parallelism (since the wh-phrase itself has wide scope over its clause as well).

Since there is no movement of the sluiced wh-phrase, island constraints are not expected to hold. For CLM, the derivation of an example like (103) is straightforward. At Spell-out, the structure is that in (104a)[22], while after IP-copy and merger, the structure is that given in (104b).

(103) They want to hire someone who speaks a Balkan language, but I don't remember which.

(104) a.   ... [$_{CP}$ which [$_{IP}$ e]]

  b.   ... [$_{CP}$ which^x [$_{IP}$ **they want to hire someone who speaks [a Balkan language]^x**]]

---

[22] The problem of the NP-ellipsis in the *which*-phrase will be ignored here and throughout — presumably similar mechanisms will be used to retrieve the appropriate descriptive content of the ellipsis as are used for resolution of 'one' anaphora. This is one aspect of merger which thus seems redundant, since it is clear that such interpretive mechanisms for NP-ellipsis are needed independently of sluicing.

Since sluicing resolved by merger is simply a species of variable-binding, which is not sensitive to syntactic constraints on A'-movement, no island sensitivity is expected. Instead, sluicing is sensitive to the scope of the correlate: if this indefinite has a scope narrower than that required by sluicing, sluicing will fail. The scopal parallelism enforced by sluicing can be seen in (103), for example. The indefinite *a Balkan language* in the first clause can only have scope over *want*, as in (105a), not inside it as in (105b); though the narrow scope reading in (105b) is certainly available to this sentence in other contexts, when the clause is meant to serve as the antecedent to the elliptical IP under sluicing, this reading is excluded. This is because using the LF that generates the reading in (105b) to resolve the IP-ellipsis in the second clause in (103) would lead to vacuous quantification of the existential operator in SpecCP, since the necessary variable associated with *a Balkan language* has already been bound by the lower .

(105) a.   y.**Balkan-language**(y)   **want**(**they**, ^[x.**person**(x)   **speak**(x,y)
           hire(**they**,x)])
      b.   **want**(**they**, ^[x.**person**(x)   y.**Balkan-language**(y)   **speak**(x,y)
           hire(**they**,x)])

When no overt correlate is available, however, some other operation must be used to supply the bindee for the base-generated wh-phrase in SpecCP. This is the operation of 'sprouting'. They hypothesize that sprouting is an instantiation of the syntactic operation of FormChain, and subject to island constraints, conceived of as constraints on A'-chain formation (independent of movement, following Cinque 1990). Quite apart from questions of the theoretical import of this approach, accounting for the locality restrictions on implicit correlate sluices solely by imposing island constraints on FormChain overgenerates. There are cases of licit A'-chains as in (106a) and (107a) which nevertheless do not make good sluices, as in (106b) and (107b).

(106) a.   When was no nurse on duty?
      b.   * No nurse was on duty, but we don't know when.

(107) a.   When is a nurse rarely on duty?

       b.   * A nurse is rarely on duty—guess when!

For CLM, the ill-formedness of the (b) examples is unexpected, since, as attested by the (a) examples, the corresponding A'-chains are well-formed. Instead, as pointed out by Albert 1993 and Romero forthcoming, the 'sprouting' cases are uniformly sensitive to selective islands (Sauerland 1996 makes a related point).   This can be reduced again to the requirement for scopal parallelism between the implicit quantifier in the antecedent clause and the quantifier associated with the wh-phrase in the sluicing clause. In the first clause in (106b), for example, the implicitly bound temporal variable has narrow scope with respect to *no nurse*, as in (108a), and does not have the reading expressed in (108b). It is this second reading which would have to be available for the sluice in (106b) to be well-formed.

(108) a.   ¬ x **nurse**(x)   t **time**(t)   **on-duty**(x, **at** t)

       b.   t **time**(t)   ¬ x **nurse**(x)   **on-duty**(x, **at** t)

Thus there is no reason to make an analytical distinction between 'merger' and 'sprouting' cases: both cases can profitably be analyzed as requiring an unbound variable in the antecedent.   They differ only in that implicit existentials (whether arguments or adjuncts) always take narrow scope in their clause, and therefore cannot provide the open variable needed in sluicing when certain other operators intervene (as in selective islands). We can therefore assume that 'sprouting' as an operation can be dispensed with, and concentrate on examples with overt correlates, as these are the ones that *can* (apparently) violate islands.

When there is an overt correlate as in (103), for example, the possible sluices over that antecedent are constrained only by whether or not the indefinite in question can be bound at a level parallel to that needed for resolution of the ellipsis, i.e., external to the IP needed for copying at LF. Since such wide-scoping behavior is only found with

(certain kinds of) overt indefinites, island-insensitive sluicing will only be found with these.

While accounting for the scopal parallelism is a significant acheivement of CLM's system, it is not unique to theirs. As Romero 1997 has shown, scopal parallelism also falls out from even the more general focus conditions; indeed, scopal parallelism between quantificational elements in elided or deaccented constituents and those in their antecedents is a quite general property, not limited to sluicing. See Fox 1998 for discussion relating to VP-ellipsis and Romero forthcoming for discussion covering sluicing and IP-deaccenting as well. This being the case, the fact that merger derives scopal parallelism in sluicing is not a particularly overwhelming argument for it.

As CLM acknowledge, their view of the possible interactions between indefinites and wh-phrases leaves the ungrammaticality of examples like the following something of a mystery.

(109) *Who^x did you see someone^x ?

Since their system makes use of just such bindings, they cannot rule this out on principled grounds, suggesting inside that it derives from some additional property holding only of overt wh-chains.

Even if this problem could be overcome, the merger account runs into several other difficulties.

First, merger cannot handle cases where the descriptive content in the sluiced wh-phrase clashes with that of its correlate (the 'contrast'-sluices of chapter 1, §1.4):

(110) a.   She's an absolute idiot: unaware of who she is, or where.
       b.   The channel was 15 feet wide, but I don't know how deep.
       c.   Abby knew which of the MEN Peter had invited, but she didn't know
             which of the WOMEN.
       d.   We know which streets are being re-paved, but not which avenues.

e.   Max has five Monets in his collection, and who knows how many van Goghs.

f.   There are nine women in the play, but I don't know how many men.

g   I know how many women are in the play, but I don't know how many men.

h.   She has five CATS, but I don't know how many DOGS.

These are problematic for a merger account, since the variable bound by the wh-operator will incorrectly come to have two restrictions, contrary to intuition. (110h), for example, certainly does not mean that I don't know how many animals she has which are both dogs and cats, since such animals don't exist.

Second, the range of possible correlates isn't always as predicted (Romero 1997 especially documents a number of counterexamples). To hers, we can add the following, correlates that can't be analyzed as Heimian indefinites:

(111) a.   More than 3 of the boys quit, but I can't remember {which/ who}.

b.   I counted fewer than 6 sorts, but I couldn't tell which.

c.   Most of the boys passed, but I don't know exactly how many.

Even pronouns, under the right conditions, can be the correlates to a sluiced wh-phrase, as the following dialog in Dutch attests, where the copied IP would contain the pronoun *er* (Romero 1997 also gives some constructed examples in Spanish and Catalan, which for some reason are less felicitous in English, as she points out; see also Fukaya 1998:11 fn 6 for discussion of the English data):

(112) "Omdat   je   er nu gewoon mee kan stoppen?"
            because you it now just   with can stop
       ... "Waarmee?"   i.e [Waarmee   kan ik nu   gewoon stoppen?]
            what-with   what-with can I now just   stop
       'A: "Because you can call it quits now?"
        B: ... "With what?"
                Joost Zwagerman. *Vals licht*, 1991, p. 248 De Arbeiderspers: Amsterdam.

Further, sometimes merger just gives the wrong restriction:

(113) More than three books were missing, but we didn't know how many.
       a.   = we didn't know how many books were missing.
       b.   we didn't know how many more than 3 books were missing.

But the biggest problem looming for Chung et al.'s 1995 account is the fact that the form-identity effects documented in chapter 3 are completely mysterious. For CLM, it is crucial that the wh-phrase be base-generated in SpecCP — the lack of movement accounts for the lack of island effects. But the form-identity effects seemed to be diagnostic exactly of movement.

First, as concluded in section 4.3, it is unclear how the case features of a wh-phrase base-generated in SpecCP could be checked; indeed, there is convincing evidence that such case features cannot be checked, accounting for the distribution of these operators in resumptive structures. But such base-generation is exactly what is posited in the CLM system.

Second, the P-stranding generalization comes as a surprise, since there is nothing in the operation of merger that would lead us to expect that 'bare' wh-phrases could not bind indefinites in prepositional phrases in German, for example, as they do in English. Instead, the facts of P-stranding are the best indication we have that wh-movement has occurred. A base-generation analysis like CLM's would have to in effect replicate the constraints on movement out of PPs in the definition of binding relevant to

merger. Since merger is supposed to be an interpretative operation, this sensitivity to parochial morphosyntactic facts is surprising. Indeed, it is the *correlation* between P-stranding under overt movement and the form of wh-phrases found under sluicing that makes any such re-definition of merger suspect: since building this condition into merger and then parametrizing it across languages would be independent of the (different) constraint on movement, we might expect to find a random distribution across languages with respect to P-stranding under sluicing and under wh-movement in non-elliptical structures. But this is not what we find: instead, the two go together with a remarkably close fit.

Thus, despite its successes, Chung et al.'s 1995 account is beset by serious problems. For a syntactic point of view, the most serious of these is its inability to accommodate the form-identity effects of chapter 3. One might wonder, however, if there might be some way to retain the advantages of this account over a pure PF-deletion approach. I turn to this question in the next section.

4.5   IP-copy and A'-chain uniformity

In this section, I present a possible alternative to Chung et al.'s 1995 LF-copying approach that attempts to capture the form-identity effects, proposed in Merchant 1998b. This account, like CLM's, is based on the premise that the identity condition on ellipsis is a fundamentally structural one, implemented by copying of LF phrases markers. After laying out the basics of the account, I point out its weaknesses, and show why ultimately it does not strike me as a viable alternative.

The data presented in chapter 3 §3.1, showing that islands are voided under sluicing, seemed to show that the PF-deletion approach to islands is inadequate. The preposition pied-piping facts of section 3.2, however, showed that Chung et al.'s 1995 approach to LF-copying, in which the indefinite is interpreted as a Heimian variable, could not account for the grammatical sensitivities attested.

One difficulty with Chung et al.'s approach can be traced to their adoption of the Heimian approach to indefinites. For them, the correlate undergoes no movement,

remaining in situ in the target clause, interpreted as an unbound variable. They assume only that the operation of existential closure must apply in the target clause before IP-copy, in order to account for the scope parallelism. It is this reliance on the Heimian theory, then, that precludes any account of the second form-identity generalization above.

Nevertheless, the island-insensitivity facts would seem to favor an LF-copy approach over a PF-deletion. How can we retain the advantages of the movement approach while continuing to make sluicing track the scope of indefinites? One possible answer is suggested by Bayer's 1996 results concerning P-stranding at LF.

On the basis of an investigation of focussing particles and wh-in-situ, Bayer claims that languages differ not only in whether or not they allow P-stranding under overt A'-movement, but also under covert A'-movement, at LF (contra Aoun 1985:63-69 and references there). His conclusions are based on data like that in (114) and (115), from English and Greek[23] (he does not actually discuss Greek, but this language patterns in the relevant respects exactly like German, his language of illustration). By hypothesis, certain types of focussing particles, like *only*, on their non-scalar readings, require LF movement of their associates. In English, which allows P-stranding, these focus particles can associate directly with a DP inside a PP as in (114b), since the DP can licitly move out of the PP at LF. In Greek, on the other hand, which does not allow P-stranding, the focus particle must attach to the PP, as in (115a). The distribution of the focus particle follows, Bayer argues, if PPs in Greek are islands at LF as well; since the particle+XP must move at LF for scopal reasons, a P-stranding violation will result at LF, correctly ruling out (115b) (assuming for the moment, that overt and covert movement are subject to the same constraints in this domain).

(114) a.   I spoke only to Bobby.   LF: [$_{PP}$ only to Bobby]$_1$ I spoke t_1
        b.   I spoke to only Bobby.   LF: [$_{DP}$ only Bobby]$_2$ I spoke [$_{PP}$ to t_2]

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[23] Thanks to A. Giannakidou and A. Roussou for judgments on the examples in this section.

(115) a.   Milisa mono me   ton Bobby.   LF: [$_{PP}$ mono me ton Bobby]$_1$ milisa t_1
         I.spoke only with the Bobby

      b.   * Milisa   me   mono ton Bobby. LF: *[$_{DP}$ mono ton Bobby]$_2$ milisa [$_{PP}$ me t_2]
           I.spoke with only the Bobby

We can use this result to solve the form-identity problem for an LF-copying
approach if we give up the assumption that indefinites do not move at LF. Instead, we
must adopt the view that indefinites, like other scope-bearing elements, are generalized
quantifiers, and as such must move at LF for type-hygienic reasons. After the indefinite
has been scoped, the resulting IP can be used to resolve the ellipsis in the sluice. For a
simple case like (116a), this will result in the derivation whose parts are given in (116b,c).

(116) a.   Idha kapjon,   alla dhen ksero   pjon.
           I.saw someone but not   I.know who
           'I saw someone, but I don't know who.'

       b.   kapjon$_1$ [$_{IP2}$ idha t$_1$]
           [[kapjon]] = P. x **person**(x)   P(x)
           [[[$_{IP2}$ idha t$_1$]]] = y.**saw**(**I**, y)

       c.   [pjon]$_1$ [$_{IP2}$ **idha [$_{DP}$t]$_1$**]

The indefinite *kapjon$_1$* 'someone' in the antecedent clause raises at LF (by whatever
version of QR is appropriate for indefinites), adjoining to IP, whose lower segment is
labelled here IP$_2$. IP$_2$ can then be copied in for the missing IP under the sluiced *pjon*
'who', yielding the LF in (116c), after A'-chain formation, represented by the syntactic
subscripts.
     This approach will also derive the scopal parallelism of Chung et al.'s account. If
the indefinite scopes too low, namely inside the copied IP, the existential quantifier of
the wh-phrase will vacuously quantify in its second argument (lamda-conversion will
not be able to occur, hence the second conjunct will not be type <t> as required). Only
if the indefinite scopes outside the IP used to resolve the ellipsis will an appropriate

variable be made available. This purely mechanical approach to the syntactic resolution of the missing IP of course does not rule out other elements scoping out and providing a variable. Though in some cases, such IPs may indeed be able to provide a syntactically appropriate IP[24], we might imagine that other factors may intervene to make the resulting interpretation infelicitous (namely constraints on focus alternatives; see Romero 1997). For the purposes of developing this account, we will here be concerned only with the narrower requirement for the structural resolution of the ellipsis (Rooth 1992a's "redundancy relation 1", Fiengo and May's 1994 "reconstruction"). As a structural account, of course, this approach inherits all the problems discussed in chapter 1; I will assume for the sake of argument, though, that these could be put aside.

We are now in a position to see how to derive the preposition-matching effect under sluicing. Again, the result is general, though I use Greek for exemplification. Indefinites, like other DPs, must pied-pipe a governing preposition at LF, if Bayer is correct. This entails that the derivation of a well-formed example like (117a) will proceed in the steps given in (117b) and (117c). First the QRed indefinite along with the preposition raises in the antecedent clause to its scope-taking position outside IP_2 as in (117b). The resulting IP_2 is then used to resolve the ellipsis as in (117c).

(117) a.　　I Anna milouse me kapjon,　alla dhen ksero　me pjon.
　　　　　　the Anna spoke　with someone but not　I.know with who
　　　　　　'Anna was speaking with someone, but I don't know with who.'
　　　b.　　[me kapjon]$_1$ [$_{IP2}$ i Anna milouse [$_{PP}$ t$_1$]]
　　　c.　　[me pjon]$_1$ [$_{IP2}$ **i Anna milouse [$_{PP}$ t$_1$]**]

In the representation in (117c), the base-generated wh-PP A'-binds a syntactic variable of the same category, namely PP. What is needed now is to subject the resulting A'-chain to a condition that requires every link in the chain to share certain basic features, here category features. But, as we saw above, such uniformity among the links

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[24] Though even this is not obvious — according to Beghelli and Stowell 1997, non-indefinite quantifiers scope to hierarchically different, and lower, positions than wide-scope indefinites.

of an A'-chain is not limited to category features, but rather extends to case (and   -features) as well. We can state this in the following condition on A'-chains:

(118) **A'-chain uniformity**

, . ,   C   F( ) = F( )

where

a.   C = < $_1$, ..., $_n$>, $_1$ in an A'-position and $_n$ in a Case-marked position, *and*

b.   F(x) = {F | F a feature of x} (let 'feature' here range over at least category, case, and   -features)

The constraint in (118) states that the features of every link in an A'-chain must match the features of every other link of the chain (including of course self-matching). This is simply one of many conceivable ways of stating the condition; we could have enforced uniformity to any arbitrarily chosen link of the chain ($_1$ or $_n$, for example) with the same results.

Let us now examine what goes wrong in an ill-formed example like (119).

(119) * I   Anna milouse me   kapjon,   alla dhen ksero   pjon.
        the Anna spoke   with someone but not   I.know who
        ('Anna spoke with someone, but I don't know who.')

There are two possible derivations to consider. First, parallel to its grammatical English counterpart, we might attempt to provide an appropriate IP for copying into the ellipsis site by scoping the correlate DP *kapjon* 'someone' directly, as in (120).

(120) * [kapjon]$_1$ [$_{IP2}$ i Anna milouse [$_{PP}$ me [$_{DP}$ t$_1$]]]

While the resulting IP$_2$ would be able to resolve the ellipsis, the movement of *kapjon* out of its governing PP is illicit, violating the PP island which holds at LF; cf. (115b) above.

The second derivation to consider satisfies LF-movement constraints by pied-piping the PP as in (117b) above, yielding (121) as the LF for the antecedent clause.

(121)   [me kapjon]$_1$ [$_{IP2}$ i Anna milouse [$_{PP}$ t$_1$]]

IP$_2$ is now the only structural antecedent available to resolve the ellipsis under *pjon*; copying this IP in yields (122).

(122)   [pjon]$_1$ [$_{IP2}$ **i Anna milouse [$_{PP}$ t$_1$]**]

Pjon must form an A'-chain with a trace inside the IP; the only trace available here is [$_{PP}$ t$_1$], and the chain formed is <[$_{DP}$ *pjon*], [$_{PP}$ t]>, as indicated by the indexing in (122). But this chain violates the A'-Chain Uniformity condition in (118)—since *pjon* is a DP but *t* is a PP, their category features do not match as required by (118).

Since neither of the possible derivations for (119) are licit, the example is ruled out. This reasoning applies to all cases of correlates inside PPs. Note that this account places the ungrammaticality of such sluicing examples not on some violation concerning the sluiced wh-phrase itself—DP sluices can be perfectly well-formed. Instead, the ungrammaticality arises through an inability of the grammar of Greek (or German, etc.) to provide an appropriate IP antecedent to resolve the ellipsis; since PPs are islands to LF-movement, no DP trace inside a PP can be provided as required by A'-Chain Uniformity.

We have now seen how A'-Chain Uniformity, combined with Bayer's hypothesis, can derive the form-identity effects documented in chapter 3. This account rests on treating indefinites as regular generalized quantifiers which reach their scopal positions at LF via some kind of movement operation. Since indefinites can take scope out of islands (see especially Farkas 1981), licit IP antecedents will be able to be generated to resolve the ellipsis in sluicing out of islands as well. Recall for example (103), repeated here as (123).

(123) They want to hire someone who speaks a Balkan language, but I don't remember which.

Fixing the scope of the indefinite *someone who...* under *want*, the first clause has two possible interpretations, corresponding to the scopal possibilities of the embedded indefinite *a Balkan language*. These two possibilies are represented by the LFs in (124a,b), and correspond in essentials to the formulas in (105a,b) discussed above.

(124) a.   [a Balkan language]$_1$ [$_{IP}$ they want to hire someone who speaks t_1]
       b.   [$_{IP1}$ they want [[a Balkan language]$_1$ [$_{IP2}$ to hire someone who speaks t_1]]]

Only the LF in (124a) provides an IP with an appropriate trace for the sluiced *which* in (123) to bind. In (124b), neither IP$_1$ nor IP$_2$ suffice: IP$_1$ does not contain an unbound trace (since t_1 is still bound within IP$_1$ by *[a Balkan language]$_1$*), while IP$_2$, if it yields an appropriate interpretation at all, does not generate the desired meaning for (123) (in particular, it loses the subordination of *someone who...* to *want*).

As in the non-island cases, the present LF-copying approach correctly derives the observed scopal parallelism. Since the mechanisms for resolving sluicing inside islands as in (123) are the same as discussed for simple cases like (116a), the account of the form-identity effects will persist.

But this account of the form-identity effects 'across' islands requires that indefinites must move at LF out of islands. This is a very dubious conclusion, one that many have sought to avoid for very good reasons (see especially Winter 1997 and Reinhart 1997, whose best argument comes from Eddy Ruys's observation that distributed readings of plural indefinites are indeed island restricted).

In other words, this account leaves it a mystery why only indefinites can move out of islands, and leaves it up to a yet-unspecified theory of islands to allow just such invisible scopal movements. Again, the prospects for a successful development of such a theory are slim. But once such a syntactic approach to the wide-scoping of indefinites is abandoned, we are left with the paradox that has plagued us throughout this chapter.

A further serious objection is that the effects of the uniformity condition in (118) are usually derived from the definition of the operation Move; Move copies an element whole, and does not alter any of its features, thereby ensuring chain uniformity. In other words, such uniformity should be a *derived* property of chains, not a *stipulated* one. Note that such a uniformity condition is actually quite problematic: it would have to have a nontrivial exception clause stipulating that it *not* apply to A'-chains terminating in resumptive pronouns inside islands; operators that bind resumptive pronouns have a number of properties that distinguish them from the operators in sluicing, as we saw above in section 4.3, one of which is that they *cannot* bear case or occur inside a PP, just the opposite of the effect of imposing a uniformity condition like (118). At this point, I see no way to make the necessary distinction.

Finally, it is up for debate whether the fundamental assumption that this account relies on —namely Bayer's analysis of LF-movement based on the distribution of focus particles— is correct (see Büring and Hartmann 1999 for a competing approach to the restrictions on the placement of these particles). As Bayer himself notes, there are languages with overt P-stranding that seem not to have P-stranding under LF movement, and languages that lack overt P-stranding but which for him must have P-stranding at LF, at least as diagnosed by association with focus particles. This kind of discrepancy between overt and covert movements is not found for the form-identity effects under sluicing.

4.6   Summary

This chapter has examined five different proposals for the structure of sluices. I have shown that each proposal suffers from serious empirical shortcomings, mostly related to a failure to be able to deal with the core data laid out in chapter 3. This is an important result, because it will force us into accepting what might otherwise be considered a too radical departure from conventional wisdom. In demonstrating the inadequacies of the sometimes quite plausible seeming analyses above, I have eliminated the competitors for

what is to come, and have drastically limited our theoretical options, laying the groundwork for the proposals in the following chapter. We have, in effect, been painted into a corner, a corner into which we might otherwise have been loath to go. It is the purpose of the next chapter to explore the nature of this corner, and to bring to light what its properties require us to believe about the nature of islands.