On "Sluicing" with apparent massive pied-piping

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Abstract This paper provides the first detailed description of a type of elliptical *wh*-question first noted in a footnote in Ross' seminal paper on sluicing. Under certain, very restricted circumstances, sluicing appears to be able to sustain *wh*-phrases with massive pied piping. I propose to analyze this pattern in terms of (recursive) contrastive left dislocation accompanied by clausal ellipsis. While it has long been known that contrastive left dislocation can be recursive, the particular ellipsis pattern observed here has not been described in detail before. The proposed analysis capitalizes on the striking descriptive similarities between the apparent sluicing pattern and the pattern of clausal ellipsis with contrastive left dislocation. At a theoretical level, the paper provides a defense of *wh*-move-and-delete approaches to sluicing by removing Ross' nagging counterexample to the generalization that only *wh*-movable constituents can be sluicing remnants.

Keywords ellipsis · sluicing · in-situ theory of ellipsis · contrastive left dislocation · German · English · move-and-delete theory of ellipsis

1 Introduction

This paper is about a small point. In his seminal paper on sluicing, Ross 1969 observed that sluicing remnants are generally phrases that can undergo regular *wh*-movement to Spec,CP. This observation is the backbone of the strongest argument for all *wh*-move-and-delete analyses of sluicing. In a footnote (1969, p. 281 fn. 10), Ross points out that there is a case in which this generalization breaks down. (1b), (1d), and (2b) illustrate the prohibition against what the literature calls massive pied-piping in full questions. (1a), which I will refer to as Ross' example, and (2a) show that this prohibition is sometimes lifted in elliptical questions and (1c) shows that, in line with Ross' generalization, this is not always the case.

(1)   a.   He has a picture of somebody, but a picture of who I don't know.
       b.   *He has a picture of somebody, but a picture of who he has I don't know.

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    c.   *He has a picture of somebody, but I don't know a picture of who.

    d.   *He has a picture of somebody, but I don't know a picture of who he has.

(2)   A: He has a picture of somebody.

    a.   B: A picture of who?

    b.   B': *A picture of who does he have?

The descriptive and analytic aims of this paper are to come to grips with this pattern. While this is a modest goal, the present analysis of Ross' example constitutes a defense of *wh*-move-and-delete approaches to sluicing, on the one hand, against direct interpretation approaches that posit no contextually variable structure at the ellipsis site and, on the other hand, against Abe's (2015) in-situ approach, a major argument for which came from Abe's analysis of Ross' example. It is these consequences that the make the small point worth our sustained attention.

    Before proceeding it will be useful to introduce some terminology explicitly. Ross 1969 introduced the term sluicing for elliptical indirect questions where the *wh*-phrase stands for the entire question. A typical example is given in (3).

(3)   [John bought [a car]] but I don't know [[which one]   _____   ]

                 [correlate]   [remnant] ellipsis site

        [antecedent   ]   [sluice   ]

The embedded question is understood to mean *which one John bought,* although what is pronounced is only *which one.* I will refer to the pronounced *wh*-phrase as the remnant. The category of the remnant in (3) is DP. The sluice is made up of the remnant and the ellipsis site, indicated in (3) by an underscore. The sluice is generally agreed (see Culicover and Jackendoff 2005; Levin 1982; Merchant 2001) to be a clause (CP). Therefore, the category of the sluice is crucially dissociated from the category of the remnant. Further, the semantic content of the sluice depends on a different clause given in the context. This clause will here be called the antecedent. In canonical examples (Chung, Ladusaw, and McCloskey's 1995 merger type of sluicing), the antecedent contains an indefinite whose identity is queried by the sluice. I refer to this indefinite as the correlate.[1]

    While Ross restricted the term sluicing to indirect questions, the subsequent literature agrees that there are also examples of sluicing in root clauses. In particular Bechhofer 1976; Hankamer 1977; Lasnik 2005; Merchant 2001 all assume that examples like (4) must involve sluicing since it shows inversion of the preposition and its complement (swiping), a property that is characteristic of sluicing and shows up under no other elliptical process.

(4)   A: Joe was talking.

          B: Who to?

However, the existence of root sluicing does not preclude the possibility that elliptical matrix questions might be derived by processes distinct from sluicing (see Bechhofer 1976; Hankamer 1977 and below).

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[1] When there is no overt correlate, the construction type is called sprouting, (ia), and when correlate and remnant contrast, I will use the term contrast sluicing, (ib).

(i)   a.   He ate, but I don't know what.

        b.   He ate two potatoes, but I don't know how many eggs.

The approaches to sluicing under discussion in the main body of this paper all assume that there is syntactic structure at the ellipsis site and that it varies from context to context. I will use the term pre-elliptical structure generically for such syntactic structure and pre-sluice (following Dayal and Schwarzschild 2010) when referring to sluicing specifically. Plausible pre-sluices for (3) include the following:

(5) a. ...which one he bought.
     b. ...which one it is.

While the body of the paper assumes that the postulation of contextually variable pre-elliptical structures is correct, the conclusion (section 6) shows that Ross' example can be used to argue for this position.

Finally, we need a name for the construction type exemplified by Ross' example. Abe 2015 calls it "topicalized sluicing," which is descriptive of his analysis but misleading if I am correct. In line with the analysis proposed in the present paper, I will use the term "Sluicing" With Apparent Massive Pied-piping construction or swamp construction for short. Sluicing is set in scare quotes, because, as we will see, example (1a) does not involve sluicing. Also, the example only appears to involve pied-piping. While the acronym is thus similar to the names given to subtypes of sluicing (sprouting, swiping, spading), the absence of an -ing-suffix reflects that the swamp construction is not a subtype of sluicing.

Ross 1969 introduces example (1) in a footnote at the end of a section containing the generalization that possible sluicing remnants are possible occupants of Spec,CP in full *wh*-questions and impossible sluicing remnants are impossible occupants of Spec,CP in full *wh*-questions. Ross draws attention to (1a) and remarks that it is an "obvious counterexamples" and professes to being "totally baffled by such sentences which may well totally invalidate" the argument from the equality of the range of sluicing remnants with phrases in Spec,CP of full questions. Ross' exasperation stems from the fact that (1b) shows that the remnant does not correspond to a possible phrase in Spec,CP in the most obvious pre-sluice. Indeed, pied-piping of this sort (termed massive pied-piping in the literature, see Cable 2010; Heck 2008) is usually claimed to be altogether impossible in indirect questions and only marginally possible in direct questions. The following examples from Abe 2015, 48 ex. 7–8 make this even clearer. Pied-piping of *doing* by *what* is impossible in all direct and indirect, non-elliptical questions, (6b), (6c), and (7B'), and also in canonical sluices, (6c). But it becomes acceptable in the swamp construction, (6a), and in reduced direct questions, (7a).

(6) a. He spent the entire day doing something at the mall, but doing what I don't know.
     b. *He spent the entire day doing something at the mall, but doing what he spent it, I don't know.
     c. *He spent the entire day doing something at the mall, but I don't know doing what.
     d. *He spent the entire day doing something at the mall, but I don't know doing what he spent it.

(7)   A: He spent the entire day doing something at the mall.
     a. B: Doing what?
     b. B': *Doing what did he spend it (at the mall)?

I take the appearance of pied-piping that exceeds the bounds of what is possible in (indirect) questions and regular (embedded) sluices to be characteristic of (unambiguous instances of) the swamp construction.

Ross 1969 did not suggest a solution for the problem posed by Ross' example to his *wh*-move-and-delete analysis of sluicing. According to Ross' analysis, the pre-sluice is syntactically

identical to the antecedent save for the differences between correlate and remnant. The remnant undergoes regular *wh*-movement and the clausal constituent thus created (C' or TP) is elided under syntactic identity with the antecedent. This theory makes three predictions of increasing strength and precision. (i) Only constituents of a type that can undergo movement can be sluicing remnants. (ii) Only constituents of a type that can undergo *wh*-movement can be sluicing remnants. (iii) Only constituents that can undergo *wh*-movement in the syntactic context of the antecedent can be a sluicing remnant.

There are well-known counterexamples to (iii), the strongest form of this claim. First, sluicing famously ameliorates islands (Ross 1969). Second, sluicing allows, in some languages under certain circumstances, prepositions to be stranded that could not be stranded in the putative pre-sluice (see a.o. Abels 2017c; Alshaalan 2015; Craenenbroeck 2010; Fortin 2007; Leung 2014; Merchant 2001; Molimpakis 2016; Nykiel 2013; Philippova 2014; Rodrigues, Nevins, and Vicente 2009; Sato 2011; Stjepanović 2008, 2012). Finally, the availability of sluicing in *wh*-in-situ languages (see a.o. Bhattacharya and Simpson 2012; Gribanova and Manetta 2016; Manetta 2013) and of multiple sluicing in languages without multiple *wh*-fronting (see a.o. Abels and Dayal 2016; Lasnik 2014; Nishigauchi 1998) pose severe difficulties for Ross' *wh*-move-and-delete analysis. In response to these difficulties, researchers pursuing *wh*-move-and-delete analyses have either endowed ellipsis with special powers, such as the power to repair islands (Bošković 2011; Chomsky 1972; Fox and Lasnik 2003; Hornstein, Lasnik, and Uriagereka 2007; Lakoff 1970; Lasnik 2001; Müller 2011; Ross 1969) or the power to make covert movement overt (Abels 2012; Boone 2015; Gribanova and Manetta 2016; Johnson 2001; Manetta 2013; Ortega-Santos, Yoshida, and Nakao 2014; Shen to appear; Thoms 2014; Weir 2014a). Or they have suggested that the pre-sluice need not be identical to the antecedent (Abels 2011, 2017b; AnderBois 2010; Baker and Brame 1972; Barros 2014, 2016; Barros, Elliott, and Thoms 2014; Fukaya 2007, 2012; Merchant 2001). Or both. The intent of these adjustments is to capture the fact that sluicing obeys–with the swamp construction being the only potential exception–the claim in (ii) from the previous paragraph: Only constituents of a type that can undergo *wh*-movement can be sluicing remnants. This is a fundamental corollary of all *wh*-move-and-delete analyses of sluicing. The analytic point of this paper is to show that Ross' example, despite appearances, is not a counterexample.

Refinements of the sort mentioned in the previous paragraph, however, are unlikely to lead to a satisfactory analysis of the swamp construction. If ellipsis in general had the special power to lift constraints on pied-piping, we would expect massive pied-piping wherever we see sluicing. But we don't. Furthermore, given that movement of phrases like *doing what* is (6a) is never involved in successful non-elliptical *wh*-interrogation, the search for a well-formed pre-sluice is doomed from the start.

To summarize the discussion so far, *wh*-move-and-delete analyses of sluicing that treat sluicing as *wh*-movement feeding clausal constituent ellipsis seem fundamentally incapable of dealing with the swamp construction. This is so for two reasons. First, there are no full *wh*-questions which show the pied-piping behavior of the swamp construction. Second, any loopholes created for the swamp construction in *wh*-move-and-delete analyses are in danger of allowing rampant overgeneration. How do you prevent the generation of examples like (6c) while allowing (6a)? In other words, how can we allow Ross' example and (6a) without undermining the fundamental and supremely successful corollary of *wh*-move-and-delete analyses?

Abe 2015 tries to capitalize on this difficulty for *wh*-move-and-delete approaches to sluicing. His own approach is not a *wh*-move-and-delete approach in the sense of the previous paragraphs because it does not involve constituent ellipsis of the clausal constituent evacuated by *wh*-movement. Abe's approach, according to him, allows a straightforward analysis of the two correlated properties of the swamp construction: its distribution and its exceptional pied-piping.

This, he suggests, should be taken as an argument against *wh*-move-and-delete approaches and as an argument for his own approach.

The obvious alternative to giving up the *wh*-move-and-delete approach is to deny that the swamp construction involves sluicing. Following the logic—though not the detail—of Bechhofer 1976, this is what the current paper does.

Concretely, I propose that the swamp construction involves (recursive in the non-root case) contrastive left dislocation accompanied by clausal ellipsis.

By way of background, consider the German examples below. Example (8a) shows that contrastive left dislocation is allowed in *wh*-questions. The non-elliptical version of example (8b) shows that this is possible also under root coordination with fronting of the question. The configuration in (8b) is broadly the same we find in Ross' example (1a): root coordination and fronting. Interestingly, clausal ellipsis of the left dislocated question *wer den zuletzt gesehen hat* is possible in this configuration leaving behind the embedded left dislocate *den Jungen* and the matrix *das weiss ich nicht*. As far as I know, this is a novel observation.

(8)   a.   Den   Jungen, wer hat den   zuletzt gesehen?
           the.M.SG.ACC boy(M)   who has dPR.M.SG.ACC last   seen
           The boy, who say him last?

       b.   Ich weiss, wer das Mädchen zuletzt gesehen hat, aber den   Jungen, (wer
           I   know who the girl   last   seen   has, but the.M.SG.ACC boy(M)   who
           den   zuletzt gesehen hat,) das   weiss ich nicht.[2]
           dPR.M.SG.ACC last   seen   hat dPR.N.SG.ACC know I   not
           I know who last saw the girl, but the boy, who last saw him, (that) I don't know.

The structure I propose for Ross' example (1a) and its German counterpart in (9) capitalizes on the possibility of eliding a question in this particular configuration. Example (9) under the present analysis is similar to (8b) above with two crucial differences: (i) The phrase undergoing left dislocation from the question contains a *wh*-word and (ii) ellipsis of the question is optional in (8b) but obligatory here. In section 5 I suggest a connection between these correlated differences: Ellipsis is obligatory because the dislocated phrase contains a *wh*-word.

(9)   German
       Er hat eine Zeichnung von jemandem, aber eine   Zeichnung von wem <*wh*.dPR
       He has a   drawing   of   somebody but a.F.SG.ACC drawing(F) of   who   *wh*.dPR
       er hat,> das   weiss ich nicht.
       he has   dPR.N.SG.ACC know I   not
       He has a drawing of somebody, but a drawing of who I don't know.

The structure for Ross' example (1a) is given in diagrammatic from in (10).

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[2] The intonation in these examples recalls hanging topic left dislocation (see Altmann 1981; Frey 2004 for discussion of the construction variously called nominaitivus pendens, hanging topic left dislocation, or freies Thema). Section 4 below argues in detail that example (8b) involves contrastive left dislocation rather than hanging topic left dislocation. The progredient intonation otherwise typical of contrastive left dislocation is presumably disrupted by the gap at the ellipsis site or maybe by the clausal boundary at the ellipsis site's right edge.

(10)

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                                              CP₁
                    ┌──────────────────────────┴──────────────────────────┐
                   CP₂                                                      CP
          ┌─────────┴─────────┐                                    ┌────────┴────────┐
        DPd                 CP₃ +wh                               DP                 C'
         △            ┌──────┴──────┐                              ┊           ┌──────┴──────┐
                     DPj            ┌┴──┐                                      C            IP
                   ┌─┴──┐          C    IP                                     ┊      ┌──────┴──────┐
                        DP              △                                                           VP
                                                                                              ┌──────┴──────┐
                                                                                             V            tDP

but   a picture of who   Q̶   w̶h̶.̶dPRd   ∅   J̶o̶h̶n̶ ̶h̶a̶s̶ ̶t̶ⱼ̶   (dPR)   ∅   I   don't   know
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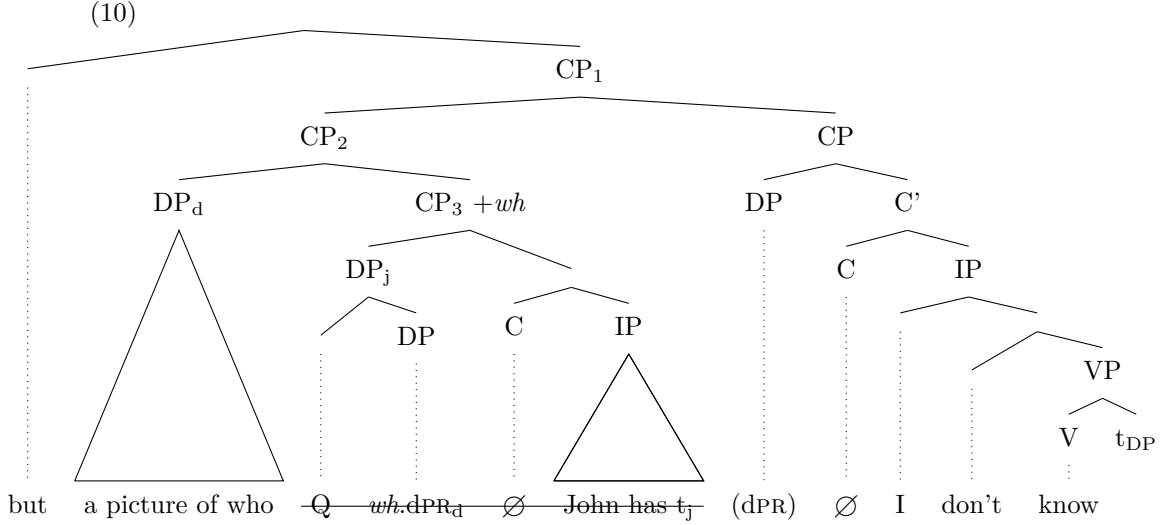
CP₂ is the structure of an example like (2a). It has the structure of (German style) contrastive left dislocation. Contrastive left dislocation involves a left-peripheral element resumed by a so-called d-pronoun. (The d-pronoun is often though not always left peripheral. See section 4 for discussion.) The left-dislocate from the question is the DP (*a picture of who*) containing the *wh*-word. CP₃ is elided. Ellipsis is obligatorily in case the left dislocate contains a *wh*-word. This contrastive left dislocation structure CP₂ is itself the left dislocate in a larger contrastive left dislocation structure represented by CP₁.

We thus have a recursive contrastive left dislocation structure with obligatory clausal ellipsis of CP₃ within the left dislocated clause. The elliptical process, which, as shown in (8b) is independently available, elides a full CP to the exclusion of the left dislocate. We are therefore not dealing with sluicing. Hence, if the current proposal is accepted, the threat for the *wh*-move-and-delete analysis of sluicing posed by the swamp construction dissolves.

The rest of the paper is structured as follows. Section 2 introduces the two previous published approaches to the swamp construction, empirically evaluates their predictions about its distribution, and extracts core structural claims from them. Section 3 is dedicated to empirically testing the structural claims emerging from the discussion in section 2. The function of these sections is, on the one hand, to build up, for the first time, a systematic and detailed understanding of the distribution and other properties of the swamp construction and, on the other hand, to justify the need for a more descriptively adequate approach. Section 4 compares the distribution and properties of the swamp construction with those of contrastive left dislocation cum question ellipsis and establishes a very strong match between the two. This section serves as justification for the current approach. It describes, for the first time it seems, the properties of left dislocation cum clausal ellipsis. In section 5, I turn to two questions raised by the analysis: How can the structure be interpreted? And why is ellipsis obligatory? Section 6 concludes the body of the paper. There are three appendices. Appendix I contains English data with verbal rather than nominal remnants. These facts indicate that the argumentation from the body of the paper built around Ross' example can be replicated for Abe's example, (6a). Appenix II shows that the swamp construction in German both with verbal and with nominal remnants behaves essentially identically to English on the one hand and identically to contrastive left dislocation with clausal ellipsis on the other hand. Appendix III centers on the question of whether Abe's in-situ approach to sluicing derives the generalization that only *wh*-movable constituents can be sluicing remnants. The discussion shows that Abe's proposal does not pose a serious challenge to

wh-move-and-delete approaches to sluicing because it fails, rather dramatically, to capture the generalization that only phrase that can undergo *wh*-movement can be sluicing remnants.

2 Section 2

This section briefly summarizes the two published accounts of the swamp construction: Bechhofer 1976 and Abe 2015. We extract key claims from both accounts to be tested in section 3 and evaluates the distributional predictions emerging from both accounts. In terms of distribution, Bechhofer's approach has a clear edge.

2.1 Bechhofer's 1976 parenthetical analysis

Bechhofer 1976 assumes that the most important distributional characteristic of the swamp construction is that it occurs in direct questions, (2a), but not in indirect questions, (1c). She then proceeds to analyze it not as a type of sluicing but in terms of the same elliptical process underlying fragment answers.[3] Bechhofer assumes that fragment formation (in English) is strictly a root phenomenon (see Griffiths 2015; Temmerman 2013 for discussion) and that it involves non-constituent ellipsis of an in-situ remnant (see Griffiths and Lipták 2014; Merchant 2004; Shen to appear; Weir 2014b for relevant discussion). The first assumption accounts for the distribution of the swamp construction. The second – for its immunity to constraints on pied-piping. Fragment formation usually[4] involves a *wh*-correlate and a non-*wh*-remnant, as well as an interrogative antecedent and a declarative construal of the elided structure. Those relations are reversed in Bechhofer's analysis of the swamp construction: The correlate is a non-*wh*-phrase and the remnant a *wh*-phrase; the antecedent is declarative and the elliptical clause interrogative. As noted, Bechhofer assumes that in fragment formation the remnant remains in situ. This is allowed also in the swamp construction because, according to Bechhofer, fragment formation may be ordered before *wh*-movement. *Wh*-movement is then suppressed once fragment formation has applied.[5] This is how Bechhofer's analysis predicts that constraints on pied-piping should play no role in the swamp construction: the remnant never moves.

Bechhofer then turns to Ross' example, (1a). She observes that it involves root coordination. Indeed, she claims that the elliptical clause is the root (of the second conjunct). The apparent matrix *I don't know* acts as a parenthetical, she suggests citing Hooper and Thompson, 1973.

We can extract two claims from Bechhofer's analysis. First, the swamp construction should be restricted to root environments and second, the apparent matrix should behave as a parenthetical. The second claim will be evaluated in section 3. Here we simply observe that Bechhofer correctly predicts the contrast between (1) and the following set of examples:

(11)   a.   The persistent reports that he has a picture of someone but (that) we don't know who (he has a picture of) are disconcerting

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[3] Following Hankamer 1971, section 4.4.5, Bechhofer calls this process stripping. But stripping is now established as a term for a (superficially) different process with a substantially different distribution. Stripping in the modern sense crucially involves coordination and, unlike fragments, is not restricted to roots and root-like contexts. To avoid confusion, I will use the term fragment formation for what Bechhofer calls stripping.

[4] Though not always (see Hankamer's (section 4.4.5) "Wrong," and Merchant 2004, Griffiths and Lipták 2014, Weir 2014b for recent discussion).

[5] Bechhofer 1976, p. 54 speculates that *wh*-movement is suppressed following ellipsis because it is string vacuous. This is dubious, though, because *wh*-movement of *who* after ellipsis sparing *a picture of who* in an example like (2a) is not string vacuous and would result in the string *who a picture of*.

    b. *The persistent reports that he has a picture of someone but (that) we don't know a picture of who (he has) are disconcerting

    c. *The persistent reports that he has a picture of someone but (that) a picture of who (he has) we don't know are disconcerting

Here, Ross' paradigm is presented in a structural context that clearly involves embedding. Bechhofer correctly rules out the crucial elliptical variant of (11c).

Three other examples that should be considered are the following, where the sluice with massive pied piping is placed in unselected positions: a clausal subject, an extraposed clausal subject, and an unselected embedded question in the sense of Adger and Quer 2001. None of these are acceptable, which reinforces a conclusion already suggested by (11c): The environments for the swamp construction are not sufficiently characterized by saying that the remnant appears in an unselected position (contra the suggestion in Abels 2017a).

(12)   *He has a picture of somebody, but a picture of who is surprising.

(13)   *He has a picture of somebody, but it is surprising a picture of who.

(14)   *They have a picture of someone in the backroom, but the bartender didn't tell me a picture of who.

Though Bechhofer does not discuss embedded root contexts, they would be of obvious relevance to the discussion. Given that she assimilates the swamp construction to fragments, we might expect the swamp construction to be possible to the same extent that embedded fragments are in English (see Griffiths 2015; Ott 2015; Temmerman 2013; Wurmbrand to appear for discussion and references). The crucial examples would need to involve embedded fragment questions and, given the absence of *wh*-movement in Bechhofer's analysis of the swamp construction, these embedded questions would also need to tolerate *wh*-in-situ. Since English never allows *wh*-in-situ in indirect *wh*-questions, it seems reasonable to conclude that Bechhofer's approach limits the swamp construction only to true roots and root coordination. The latter case includes Ross' example (1a) via the analysis of the apparent matrix as a parenthetical.

2.2 Abe's 2015 in-situ analysis

Abe 2015 analyzes the swamp construction against the background of his in-situ approach to sluicing. Within that analysis, and assuming the copy theory of movement, the pre-sluice for a canonical sluicing example like (15) is given in (15a).

(15)   He has a picture of somebody, but I don't know who.

    a. ...<who> he has a picture of <who>.

Unlike in Ross' analysis, this structure does not feed into ellipsis of a clausal constituent but instead into non-constituent ellipsis with the [Focus]-marked element as the remnant. Crucially for Abe, the *wh*-chain is pronounced in-situ (indicated by the subscript [PF]) because in chain links that do not cross overt material (or *wh*-traces) the low copy (if any) is pronounced.[6]

(16)   ...but I don't know <who>$_{[Focus]}$ ~~he has a picture of~~ <who>$_{[Focus][PF]}$

In Ross' example, this normal course of events is disturbed by topicalization of *a picture of who* into the matrix. The moving constituents and their copies are again enclosed in acute brackets

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[6] Appendix III shows that Abe's account fails to capture the generalization that only *wh*-movable constituents can be sluicing remnants.

in the following structure and annotated with the movement inducing properties, the ellipsis-suspending [Focus] property, and the allocation of [PF] properties to the chain for clarity:

(17)   ...but <a picture of <who>$_{wh}$ >$_{topic[Focus][PF]}$ I don't know <who>$_{wh}$ ~~he has~~ <a picture of <who>$_{wh}$ >$_{topic[Focus]}$

As we have just seen, *who* would normally be pronounced in-situ under Abe's approach but, since this low copy is now part of a separate overt movement chain, it is pronounced within that chain.

The non-elliptical version of this derivation is the ungrammatical remnant movement structure in (18).

(18)   *...but a picture of I don't know who he has.

To rule this out, Abe assumes that *wh*-movement of *who* and topicalization of *a picture of (who)* constitute the same type of movement. (18) is then a violation of Müller's generalization: Movement of type X does not feed remnant movement of the same type (Müller 1998; Takano 2000).[7] To successfully capture the distinction in acceptability between Ross' example and (18), Abe suggests treating Müller's generalization not in the narrow syntax but as a problem of linearization.[8]

There is a conceivable alternative pre-sluice for Ross example, namely (1b). This structure features a fronted sluice rather than a fronted remnant:

(19)   ...but <<a picture of who> he has> I don't know <<a picture of who> he has>

Abe rules out (19) on the reasonable grounds that the *wh*-feature on the complementizer within the sluice would not be able to be checked properly, because the *wh*-word is buried too deeply within Spec,CP. This is what rules out massive pied-piping quite generally.

Abe further assumes that examples like the following are derived in a way similar to Ross' example, that is, by topicalization of the remnant, rather than in a way similar to (19), that is, by topicalization of the sluice.

(20)   He has a picture of somebody, but who I don't know.

In other words, Abe assumes that the pre-sluice for (20) is (21a) and cannot be (21b).[9]

(21)   a.   ...but <who>$_{wh topic[Focus][PF]}$ I don't know <who>$_{wh topic[Focus]}$ ~~he has a picture of~~ <who>$_{wh topic[Focus]}$

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[7] The assumption that *wh*-movement and topicalization constitute the same type of movement for the purposes of Müller's generalization is empirically wrong and leads to undergeneration. It seems more promising to subsume the ungrammaticality of (18) under the generalization that categories containing unbound intermediate traces cannot undergo remnant movement. For discussion of both issues, relevant examples, and references see Müller 1998, ch. 1.3.4 and ch. 6.

[8] The mechanism by which (18) comes out as a problem for linearization is the entirely ad hoc and complicating assumption that "[t]he decision of which occurrence of a non-trivial chain carries its [PF] feature is made upon the completion of producing the chain involved, except for the case where a phrase carrying a feature F is properly contained in another phrase carrying F. In that case, the decision is postponed until both Fs are satisfied" (Abe 2015, p. 63 #63). Not only is this ad hoc, it also flies in the face of the strictly derivational approach Abe endorses whereby "features [including the [PF] feature, author] are not copied when Internal Merge (=Move) is applied but rather they are scattered" (Abe 2015, p. 16).

[9] Abe is forced into this position because of his assessment that the swamp construction and also example like (20) show sensitivity to islands within the sluice (see Appendix III for discussion). It then follows from Abe's approach to island amelioration under sluicing that derivations like (17) and (21a) should show island sensitivity within the sluice but (21b) should not.

b. ...but $<<$ who$>_{wh[\text{Focus}][\text{PF}]}$ ~~he has a picture of~~ $<$ who$>_{wh[\text{Focus}]}$ $>_{\text{topic}[\text{PF}]}$ I don't know $<<$ who$>_{wh[\text{Focus}]}$ ~~he has a picture of~~ $<$ who$>_{wh[\text{Focus}]}$ $>_{\text{topic}}$

Abe does not address the question of how to rule out out (21b) and it is not at all clear how he could. We need not pursue this particular issue further, though; the arguments given in this and the next section show that neither Ross' example nor (21b) involve topicalization of the remnant but fronting of a CP.

The two claims that we extract from Abe's account for further scrutiny are that in the swamp construction the remnant is fronted rather than the sluice and that therefore the category of the fronted element should always be the category of the remnant (DP in Ross' example (1a)) and not that of the sluice (CP). We will investigate this claim in section 3. Second, we extract the claim that the process giving rise to the swamp construction is topicalization. Topicalization is possible in root clauses and in coordinations of root clauses. Presumably, Abe intends this to explain the distribution of the swamp construction. We will now test whether or not the distribution of the swamp construction tracks the availability of topicalization.

The first potential problem arises, maybe surprisingly, for Ross' example (1a) and the root version of it (2a). Consider the following examples first.

(22) a. ?Joe has a picture of Nixon, but a picture of Kennedy I don't know who has.
      b. *Joe has a picture of Nixon, but a picture of Kennedy, I don't know who.

The examples show that topicalization from a question is only mildly deviant, (22a), but topicalization from a sluice, (22b), is sharply ungrammatical. While this is somewhat problematic for Abe's approach, it should be pointed out that (22b) is probably independently ruled out by the condition that the *wh*-phrase in sluices must bear heavy stress (Hartman 2005). This condition is not met here.

Next consider the Abe-style pre-sluice for (2a), which is pronounced simply as *A picture of who?*:

(23) $<$a picture of $<$who$>_{wh[\text{PF}]}$ $>_{\text{topic }[\text{PF}][\text{Focus}]}$ $[$ $<$who$>_{wh}$ ~~does he have~~ $<$a picture of $<$who$>_{wh}$ $>_{\text{topic}[\text{Focus}]}$ $]$

The remnant here is topicalized past the *wh*-phrase. The problem, however, is that such topicalization past a *wh*-phrase is not possible in root questions (see Bianchi and Frascarelli 2010, 77 ex. 47, where the following example is taken from):

(24) a. *These petunias, did John plant?
      b. *These petunias, when did John plant?

As the contrast between these examples and the only mildly deviant (22a) shows, we are not simply dealing with an island effect here that would be repaired by sluicing. Thus, it is unclear what the basis for Abe's claim is that topicalization of the remnant underlies the swamp construction and accounts for its distribution. This discussion casts doubt on the ability of Abe's analysis to generate examples (1a) and (2a), which it is designed to account for.

An extension of this problem comes from the following data point, which simply attempts to embed (2a) under wonder.

(25)   A: He has a picture of somebody.
      a. B: *I wonder a picture of who(m)?

(25a) is unacceptable. To explain this fact, Abe would presumably invoke the idea that "topicalization does not occur in embedded interrogative clauses" Abe 2015, p. 56. He thus claims

that there is a distinction in terms of topicalization to the left of the *wh*-phrase between direct and indirect questions. It is hard to see what this claim is based on. The embedded versions (26) of Bianchi and Frascarelli's examples (24) are not worse than the original matrix versions. Other topic-like structures to the left of the *wh*-phrase also fail to distinguish direct from indirect questions, (27).

(26) a. *I wonder these petunias {if | whether} John planted.
      b. *I wonder these petunias when John planted.

(27) a.   When you get home, what do you want to do? McCloskey 2006, p. 10 ex. 31a
      b. ?I wonder when we get home what we should do. McCloskey 2006, p. 16 ex. 57b

Setting these serious worries aside for now, we turn to the question of whether the distribution of the swamp construction tracks the distribution of topicalization in other cases. The following examples are telling. They involve the matrix predicates *glad* and *tell*. These predicates allow embedded topicalization, as shown in **??** from Bianchi and Frascarelli 2010, 69 ex. 39.

(28) a. I am glad that this unrewarding job, she has finally decided to give up.
      b. Mary didn't tell us that Bill she had fired, and John she had decided to promote.

Nevertheless, *glad* and *tell* fail to allow the swamp construction in their complement:

(29) a. *He has a picture of someone, but I sure am glad that a picture of who nobody knows.
      b. *He has a picture of someone, but you never told us that a picture of who nobody knows.

The swamp construction then does not seem to share the distribution of topicalization.

As we have seen, Abe's claim that the swamp construction involves topicalization runs into distributional difficulties. In direct questions, swamp is possible but topicalization is impossible. In indirect questions, swamp is impossible and so is topicalization. In embedded declaratives, where topicalization is possible, swamp is impossible.

The current account, which relates the swamp construction to left dislocation, does not run into the same difficulties. Left dislocation is possible in direct questions ((30) from Bianchi and Frascarelli 2010, 77 ex. 46), in root coordinated declaratives ((31) based on Bianchi and Frascarelli 2010, 62 ex. 22), and impossible under *glad* and *tell* ((32) from Bianchi and Frascarelli 2010, 76 ex. 45):

(30) a. These petunias, did John plant them?
      b. These petunias, when did John plant them?

(31) A: What can you tell me about John?
      B: I can't tell you anything about John, but Bill, Mary kissed him.

(32) a. *I am glad that this unrewarding job, she has finally decided to give it up.
      b. *Mary didn't tell us that Bill she had fired him.

Furthermore, Bianchi and Frascarelli 2010, p. 75 note that most of their "English informants did not easily accept embedded L[eft] D[islocation] as such." Unlike Abe's account, which has difficulties in account for the distribution of the swamp construction, the current approach promises to get the distribution right. The issue will be taken up in more detail in section 4.

2.3 Summary

In this section we have seen that swamp clauses can appear as root clauses and fronted in root coordination but apparently nowhere else. This is in line with the expectations from Bechhofer's analysis. When it comes to distribution, Abe's analysis misgenerates rather dramatically. The open issues for the next section include the following questions: Is the relation between the swamp clause and its apparent matrix one of syntactic subordination (as per Abe's and the current analyses) or of parenthesis (as suggested by Bechhofer)? Is the fronted constituent clausal (as per Bechofer's and the current analyses) or is the category of the fronted constituent that of the remnant (as suggested by Abe)?

3 Section 3

In this section we will investigate the two questions mentioned at the end of the previous section in the order given. We will see that there is strong evidence that swamp clauses are subordinated and that the fronted constituent must be a clause and cannot be the remnant alone.

3.1 Embedding or parenthesis

In this subsection we will use two of customary diagnostics to distinguish embedding from parenthesis: binding and word order.[10]

Typical cases of parenthesis are characterized by a lack of binding relations between the parenthetical expression and its host. This is illustrated in (33a) by the lack of condition C effects in either direction. In embedding structures, (33b), we find do find the effects of condition C. Lack of binding effects is also shown by the impossibility of variable binding by a quantifier between host and parenthetical in either direction, (33c), while such binding is of course possible, subject to c-command and scope, in embedding structures, (33d).

(33)   a.   (i) $John_j$ bought, he_j claims, all the necessary books.
                (ii) He_j bought, $John_j$ claims, all the necessary books.
        b.   (i) *He_j claims (that) $John_j$ bought all the necessary books.
                (ii) $John_j$ claims (that) he_j bought all the necessary books
        c.   (i) *He_n bought, $nobody_n$ claims, all the necessary books already.
                (ii) *$Nobody_n$ bought, he_n claims, all the necessary books already.
        d.   (i) $Nobody_n$ claims (that) he_n bought all the necessary books already.
                (ii) *He_n claims (that) $nobody_n$ bought all the necessary books already.

Second, the host in an appositive root structure shows root word order rather than embedded word order while true embedding shows the opposite pattern. This is illustrated through obligatory subject-auxiliary inversion in the host clause in (34a–b) and its impossibility (in standard English) in indirect questions.

(34)   a.   What, Peter asks, can syntax do for him?
        b. *What, Peter asks, syntax can do for him?
        c. $Nobody_n$ asks what syntax can do for him_n.

---

[10] The discussion does not depend on any particular analysis of parenthesis and does not bear on the issue of whether the derivation of parentheticals involves embedding at some level of represenation (see Schneider, Glikman, and Avanzi 2015 for discussion and references).

       d.   *Nobody$_n$ asks what can syntax do for him$_n$.   [Standard English]

On both diagnostics swamp clauses pattern as embedded clauses rather than as hosts for parentheticals. Though vehicle change effects prevent testing condition C effects under ellipsis, variable binding into the swamp clause is clearly possible. Example (35) is a base line. It shows a regular sluicing construction with fronting of the question. The interpretation indicated in (35b), a plausible pre-sluice for (35a), with binding of *they* by *nobody* is clearly available. (36) is the swamp counterpart of the example. The interpretation indicated in (35b) (and (36b)) is available in (36a), although (36b) is, of course, unacceptable because of the illicit pied-piping.

(35)   a.   Everybody will have to take a picture of somebody, but who, nobody knows yet.
         b.   Everybody will have to take a picture of somebody, but who they$_n$ will have to take a picture of, nobody$_n$ knows yet.

(36)   a.   Everybody will have to take a picture of somebody, but a picture of who, nobody knows yet.
         b.   *Everybody will have to take a picture of somebody, but a picture of who they$_n$ will have to take, nobody$_n$ knows yet.

The interpretive facts thus suggest an embedding structure rather than a parenthetical structure.

Second, if swamp clauses were hosts in parenthetical structures, we'd expect corresponding full clauses (without massive pied-piping) to behave like hosts for parentheticals. The impossibility of subject-auxiliary inversion in (37) shows this not to be the case.

(37)   a.   John has a picture of someone, but who he has a picture of, I don't know.
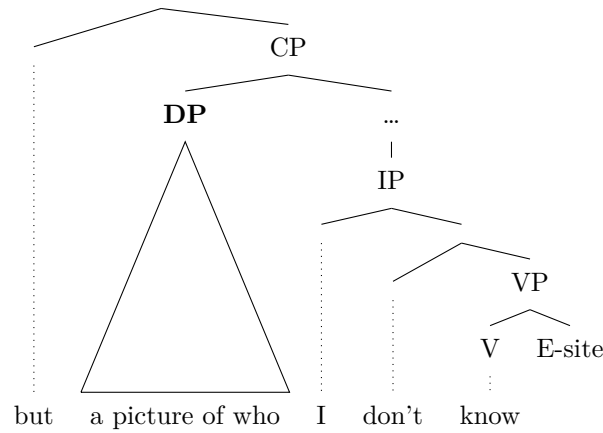   b.   *John has a picture of someone, but who does he have he a picture of, I don't know.[11]

The word order facts thus also suggest an embedding structure rather than a parenthetical one. It then seems safe to rule out Bechhofer's parenthetical analysis of the swamp construction on the basis of these rather clear diagnostics.

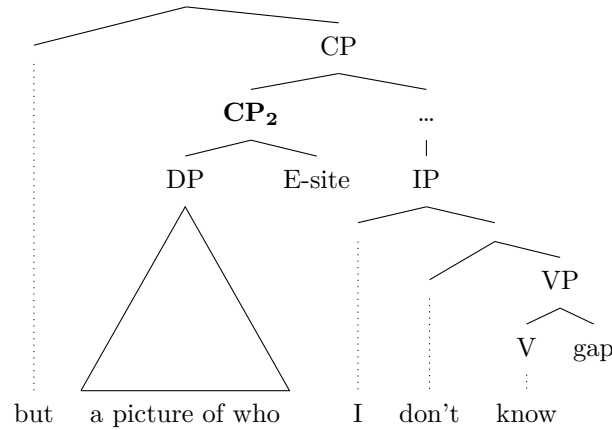3.2 The category of the fronted constituent

In this subsection we address the question of whether the swamp construction involves fronting of the remnant alone (a DP in Ross' example (1a)) or of a clausal constituent. We will, in other words, evaluate the merits of the following two structures:

---

[11] This string of words is acceptable under an intonation that signals three independent clauses and with a clear break before *I don't know*: *John has a picture of someone.* || *But who does he have a picture of?* || *I don't know.* This would serve as a representation of a quirky internal monologue, but this is neither the effect nor the intonation characteristic of the swamp construction.

(38)   a.

```
                              CP
                    ┌──────────┴──────┐
                   DP                 …
                   /\                 |
                  /  \                IP
                 /    \        ┌──────┴──────┐
                /      \        I           VP
               /_____\   don't        ┌──┴────┐
                                          V    E-site
         but   a picture of who    I    don't  know
```

b.

```
                              CP
                    ┌──────────┴──────┐
                  CP₂                 …
                 ┌─┴────┐             |
                DP    E-site          IP
                /\             ┌───────┴──────┐
               /  \            I             VP
              /    \        don't         ┌───┴───┐
             /_____\                     V     gap
                                       know
         but   a picture of who   I    don't  know
```

Structure (38a) is a representation of Abe's claim that what is fronted is only the remnant. Structure (38b) is an abstract representation of the claim made in the present paper, (10).

The first argument for (38b) and against (38a) depends on the observation that the availability of the swamp construction correlates with the availability of CP fronting. While *not know* in Ross' example readily allows CP fronting (see (35b) above), such fronting is impossible with other predicates. For example, extraposed subject *wh*-questions cannot readily be fronted, (39a) versus (39b).

(39)   a.   Something causes this effect, but it is unclear what (causes this effect).
       b. ??Something causes this effect, but what (causes this effect) it is unclear.

The same limitation shows up in the swamp construction: The elliptical version of (40b) remains ungrammatical.

(40)   a. *The influence of something causes this effect, but it is unclear the influence of what
           (causes this effect).
       b. *The influence of something causes this effect, but the influence of what (causes this
           effect) it is unclear.

This is as we would expect if the swamp construction involved a fronted CP but not if it involved a fronted remnant, since extraposed clauses are not islands for extraction:

(41)   Which book is it obvious that every budding syntactician should read?[12]

Another instructive set of contrasts can be constructed on the basis of data in Turnbull-Sailor 2007. Turnbull-Sailor 2007, p. 13 discusses the contrast between *wonder* and *discover* in (42) and that between *ask* and *determine* in (43). The interesting observation is that (in these particular contexts) *wonder* and *ask* can but *discover* and *determine* cannot follow their interrogative complements.

(42)   Turnbull-Sailor 2007, 13 ex. 24
  a. They all wondered what could be done.
  b. What could be done, they all wondered.[13]
  c. They all discovered what could be done.
  d. *What could be done, they all discovered.

(43)   Turnbull-Sailor 2007, 13 ex. 25
  a. The juror asked who should be found guilty.
  b. Who should be found guilty, the juror asked.
  c. The juror determined who should be found guilty.
  d. *Who should be found guilty, the juror determined.

DP topicalization in comparable cases gives rise to a *wh*-island effect with all four embedding predicates. When we turn to canonical sluicing, we find that regular sluicing shows the same pattern as full interrogative clauses: *wonder* and *ask* do but *discover* and *determine* do not allow fronting of the sluice:

(44)   a. He had eaten something poisonous. They all wondered what.
  b. He had eaten something poisonous. What, they all wondered.
  c. He had eaten something poisonous. They all discovered what.
  d. *He had eaten something poisonous. What, they all discovered.

(45)   The DA argued somebody's friend should be questioned.
  a. ...The juror asked whose friend.
  b. ...Whose friend, the juror asked.
  c. ...The juror determined whose friend.
  d. *...Whose friend, the juror determined.

This is unsurprising given that sluices are CPs. The same contrasts show up again in the swamp construction, as illustrated in (46).

(46)   a. The DA argued a friend of somebody should be questioned.
    (i) ...A friend of who, the juror wondered.
    (ii) *...A friend of who, the juror discovered.

---

[12] Attempts to extract from an extraposed *wh*-question show the expected *wh*-island effects, but to maintain the idea that the swamp construction involves fronting of the remnant alone, this effect would somehow have to be nullified in the construction anyway.

[13] The fronted question in examples like these show subject-auxiliary inversion but according to Turnbull-Sailor 2007, pp. 13–14 they still show behavior characteristic of embedded questions. The argument made here does not hinge on any particular resolution of this issue. See discussion below example (46).

    b.   The defendant had taken a picture of somebody.
        (i)   …A picture of who, the prosecutor asked.
        (ii) *…A picture of who, the prosector determined.

The pattern can easily be understood if the swamp construction obligatorily involves clausal fronting. If, on the other hand, the swamp construction involves fronting of the remnant alone, the consistent patterning of clauses with remnants in the swamp construction remains mysterious. The data in (44) and (45) also pattern the same way, suggesting that the category fronted in those examples is the same as in (46) and in (42) and (43), respectively. These paradigms thus suggest that both Ross' example and examples like (21) involve CP fronting and cannot involve fronting of the remnant alone.[14]

    The second argument uses the distribution of swiping to diagnose the structure of Ross' example. As mentioned above, swiping is the possibility, available only under sluicing, of inverting the preposition with its adjacent complement:

(47)   Joe was talking, but I can't remember what about.

Many analyses of swiping (see Craenenbroeck 2010; Hartman 2007; Hartman and Ai 2009; Kim 1997; Richards 2001; Ross 1969) attribute a structure to such examples in which the preposition and its complement do not form a constituent to the exclusion of the question nucleus. One possibility is illustrated in (48), but there are also variants where the PP is to the right of the ellipsis site or within the ellipsis site (and swiping involves non-constituent deletion).

(48)
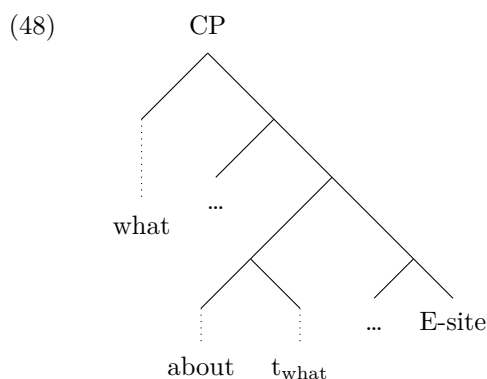
Under such analyses, we correctly expect (49a) to be acceptable and (49b) to be ungrammatical if and only if the entire elliptical CP is fronted in the examples but not if fronting of the *wh*-remnant alone is possible.

(49)   a.   John was talking, but what about I don't know.
        b. *John was talking, but what I don't know about.[15]

---

[14] This conclusion is unaffected by the considerations raised in footnote 13, because even if the fronted questions in Turnbull-Sailor's examples are root questions, the acceptable examples (46a-i) and (46b-i) should, under Abe's assumptions, be ambiguous between a derivation with a fronted remnant and one with an initial root question. While the structure with the initial root question is ruled out for (46a-ii) and (46b-ii) by the same condition that rules out examples (42d) and (43d), this should leave unaffected the second derivation, the derivation where the elliptical clause remains after the embedding verb and only the remnant is fronted. This derivation, though, appears to be systematically unavailable.

[15] Examples like (i) from Hartman and Ai 2009 look similar, but seem to involve a parenthetical construal of 'do you think' as (ii) shows.

The argument can be avoided to the extent that there is support for alternative approaches to swiping according to which the *wh*-word and the preposition form a constituent to the exclusion of the question nucleus (see Chung, Ladusaw, and McCloskey 1995; Lobeck 1995; Merchant 2002; Riemsdijk 1978).[16]

The next argument involves multiple sluicing. Multiple sluices, (50a) can be fronted in the contexts where the swamp construction occurs, (50b). However, the two *wh*-phrases cannot be separated, (50c–d).

(50)   a.   Every student talked about a paper, but I don't know which student about which paper
       b.   Every student talked about a paper, but which student about which paper I don't know.
       c.   *Every student talked about a paper, but which student I don't know about which paper.
       d.   *The advisor of every student talked about some paper, but the advisor of which student I don't know about which paper.

Under an analysis of multiple sluicing under which the *wh*-phrases do not cluster, (51), that is, do not form a an exhausitve constituent (see Abels and Dayal 2016; Boone 2015; Lasnik 2014; Merchant 2001; Richards 2001 a.o.), the contrast in (50) is expected if and only if there is CP fronting and no fronting of the individual remnants.[17]

(51)
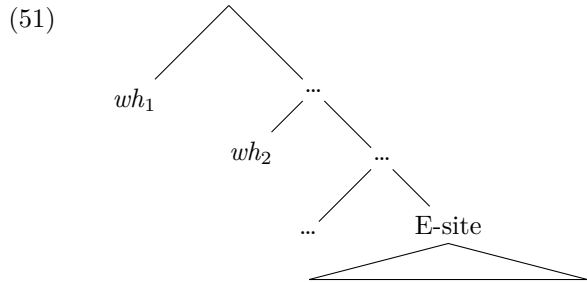
(i)   Will I get married, and if so, who do you think with?

(ii)   A: Everyone voted today.
           B: Who did they {say | *admit} for?
           B':   Who didn't anybody {say | admit} they voted for?
           B":   *For who didn't anybody {say | admit}?
           B"': *Who didn't anybody {say | admit} for?

B" with 'say' casts doubt on the availability of long-distance clausal ellipsis. B"' with 'say' — on that of long distance swiping.

[16] Abe's 2015, pp. 18–20 analysis of swiping belongs in this family of approaches, too. As shown in Appendix III, Abe's analysis of swiping massively overgenerates (see (119)) and I set it aside for this reason.

[17] Abe 2015 proposes that *wh*-phrases in multiple sluicing form a cluster. This proposal, of course, avoids the problem with the separated *wh*-phrases in (50). However, it is not clear to me what would force clustering of multiple *wh*-phrases under Abe's in-situ approach to sluicing because nothing in the theory as presented rules out assigning the [Focus] property, which, recall, allows a phrase to survive ellipsis, to more than one phrase. Of course, a stipulation can be added to the theory to the effect that only a single constituent within an ellipsis site can survive to PF. Apart from being unmotivated, this stipulation would not solve the problem posed by (50), because in the cases where the *wh*-phrases are separated, the ellipsis site contains only a single pronounced phrase on the surface.

The previous two arguments were not directly about the swamp construction with its characteristic massive pied-piping. This was necessitated by the fact that neither swiping nor multiple sluicing seem compatible with massive pied-piping. These arguments therefore only address the claim that all examples of the general shape of Ross' example must (or may) involve fronting of the remnant. The arguments suggest that this position (adopted in Abe 2015) is wrong and that, at the very least when massive pied-piping is absent, fronting of the sluice is the only possibility. A further limitation of these last two arguments is that they stand and fall with specific assumptions about the surface constituency of swiping and multiple sluicing, namely that the *wh*-word and the preposition do not form a constituent to the exclusion of the question nucleus for swiping and that the *wh*-phrases do not cluster for multiple sluicing. The argument that follows draws on comparative data from German but is otherwise more direct.

German shows similar restrictions on pied-piping in embedded *wh*-questions as English (see Heck 2008; Webelhuth 1992). This is illustrated in (52a) and (52b) for the two types of pied-piping that we have seen in (1a) and in (6a).

(52)   German
        a. *Ich frage mich, die Gerüchte über   wen ihn schockiert haben.
             I   ask   myself the rumors   about who him shocked   have
             Webelhuth 1992, 120 ex. 29
        b. *Ich frage mich, um   was zu erreichen er im   Einkaufszentrum war.
             I   ask   myself in.order what to achieve   he in.the mall   was

These constraints are also operative under regular sluicing:

(53)   German
        a. *Die Gerüchte über   jemanden haben ihn schockiert, aber ich weiss nicht, die
             The rumors   about someone have   him shocked   but I   know not   the
             Gerüchte über   wen.
             rumors   about who
        b. *Er war den ganzen Tag im   Einkaufszentrum, um   dort etwas   zu
             he was the whole day at.the mall   in.order there something to
             erledigen, aber ich weiss nicht, um   dort was zu erledigen.
             deal.with but I   know not   in.order there what to deal.with

Ross' and Abe's examples ((1a) and (6a)) can be translated into German, but then the use of a contrastive left dislocation structure is obligatory:[18]

(54)   German
        a. Die Gerüchte über   jemanden haben ihn schockiert, aber die Gerüchte über
            the rumors   about someone have   him shocked,   but the rumors   about
            wen, *(das) weiss ich nicht.
            who   dPR   know I   not
            The rumors about someone shocked him, but the rumors about who, I don't know.
        b. Hans hat ein Bild   von jemandem, aber eine Bild   von wem, ??(das) weiss ich
            Hans has a   picture of somebody, but a   picture of who   dPR   know I
            nicht.[19]
            not

Hans has a picture of somebody, but a picture of who I don't know.

c. Er war den ganzen Tag im   Einkaufszentrum, um   dort etwas   zu
    he was the whole day at.the mall   in.order there something to
    erledigen, aber um   dort was zu erledigen, *(das) weiss ich   nicht.
    deal.with but in.order there what to deal.with   dPR I   know not
    He was the whole day at the mall to take care of something, but to take care of
    what I don't know.

We will look at the properties of contrastive left dislocation in much more detail in the next section. For now it is sufficient to know that canonical examples of contrastive left dislocation in root clauses have a left dislocated element in the first position, followed by a so-called d-pronoun ('d' for the initial letter of this class of pronouns) resuming the left dislocated element, followed by the finite verb in third position.

The d-pronoun agrees in number, gender, and case with the left dislocated phrase and both the d-pronoun and the left dislocate show case connectivity into the clause internal position. These properties are illustrated in the following examples. (55d) also shows that the d-pronoun, glossed as dPR throughout, is not necessarily homophonous with the corresponding definite article.

(55) German
    a. {Den | *Dem}   Mann, {den | *dem}   habe ich
        the.M.SG.ACC the.M.SG.DAT man   dPR.M.SG.ACC   dPR.M.SG.DAT have I
        gesehen.
        seen
        The man, I saw him.
    b. {*Den | Dem}   Mann, {*den | dem}   habe ich
        the.M.SG.ACC the.M.SG.DAT man   dPR.M.SG.ACC dPR.M.SG.DAT have I
        geholfen.
        helped
        The man, I helped him.
    c. {*Den   Mann, | Die   Frau,} die   habe ich gesehen.
        the.M.SG.ACC man   the.F.SG.ACC woman dPR.F.SG.ACC have I   seen
        The woman, I saw her.
    d. Den   Männern, {*dem | denen}   habe ich geholfen.
        the.PL.DAT men   dPR.M.SG.DAT dPR.PL.DAT have I   helped
        The men, I helped them.

Clauses are resumed by the third person singular neuter form of the d-pronoun or, when they originate inside of a PP, with the r-pronoun *da* or the appropriate prepositional adverb. Nouns are not resumed by r-pronouns or prepositional adverbs.

(56) German
    a. {Wen er eingeladen hat | Dass er Hans eingeladen hat} {das |
        who he invited   has   that he Hans invited   has   dPR.N.SG.ACC
        *den | *die | *da} soll niemand erfahren.
        dPR.M.SG.ACC   dPR.F.SG.ACC/PL.ACC   there shall nobody find.out
        {Who he invited | That he invited Hans}, nobody is supposed to find out.

---

[19] To my ear, massive pied-piping with indefinite DPs sound much better than with definite DPs both in full questions and in sluices. This is probably the source of improvement in this example.

    b.   {Wen er eingeladen hat | Dass er Hans eingeladen hat} {da | *das}
         who he invited   has that he Hans invited   has   there   dPR.N.SG.ACC
         redet niemand drüber.
         talks nobody there.about
         {Who he invited | That he invited Hans}, nobody talks about.

    c.   {Wen er eingeladen hat | Dass er Hans eingeladen hat} {darüber | *da |
         who he invited   has that he Hans invited   has   there.about   that
         *das}   redet niemand.
         dPR.N.SG.ACC talks nobody
         {Who he invited | That he invited Hans}, nobody talks about.

The fact that the resumptive element agrees in ϕ-features with nominal left dislocates but is invariably third singular neuter, an r-pronoun, or a prepositional adverb with a clausal left dislocate allows us to test the category of the fronted constituent in the German renditions of the swamp construction. The examples below show clearly that the fronted constituent must be a clause. The resumptive element in all of the below examples invariably has to be the third singular neuter d-pronoun independently of the gender of the head noun of the remnant, (57), the case of the remnant, (58), or the number of the remnant, (59).

(57)   German
    a.   Er hat das Bild   von jemandem mitgenommen, aber das Bild   von wem
         he has the picture(N) of   somebody with.taken,   but the picture(N) of   who
         {das | *den | *die}   weiss ich nicht.
         dPR.N.SG.ACC   dPR.M.SG.ACC   dPR.F.SG.ACC know I   not
         He took the picture of somebody, but the picture of who I don't know.

    b.   Er hat die Zeichnung von jemandem mitgenommen, aber die Zeichnung von
         he has the drawing(F) of   somebody with.taken,   but the drawing(F) of
         wem {das | *den | *die}   weiss ich nicht.
         who dPR.N.SG.ACC   dPR.M.SG.ACC   dPR.F.SG.ACC know I   not
         He took the drawing of somebody, but the drawing of who I don't know.

    c.   Er hat den Steckbrief   von jemandem mitgenommen, aber den
         he has the wanted.poster(M) of   somebody with.taken,   but the
         Steckbrief   von wem {das | *den | *die}
         wanted.poster(M) of   who dPR.N.SG.ACC   dPR.M.SG.ACC   dPR.F.SG.ACC
         weiss ich nicht.
         know I   not
         He took the wanted poster of somebody, but the wanted poster of who I don't know.

(58)   German
    Er hat dem   Bruder   von jemandem geholfen, aber dem   Bruder
    he has the.M.SG.DAT brother(M) of   somebody helped   but the.M.SG.DAT brother
    von wem, {das | *dem}   weiss ich nicht.
    of   who   dPR.N.SG.ACC   dPR.M.SG.DAT/N.SG.DAT know I   not
    He helped the brother of someone, but the brother of who I don't know.

(59)   German
    Er hat die Bilder   von jemandem mitgenommen, aber die Bilder   von wem
    He has the pictures of   somebody with.taken   but the pictures of   who
    {das | *die}   weiss ich nicht.
    dPR.M.SG.ACC   dPR.PL.ACC know I   not

He has pictures of somebody, but pictures of who I don't know.

The possibility of the neuter singular resumptive in all of these examples shows that the category of the fronted constituent may be CP and the impossibility of ϕ-agreement with the head of the remnant shows that fronting of the DP alone is strictly impossible. This conclusion is corroborated when we consider clauses that act as the complements of a preposition. The resumptive element is either the r-pronoun or the appropriate prepositional adverb, (60). The ϕ-agreement expected under an account where the remnant alone is left dislocated would lead to sharply ungrammatical examples like (61).

(60)   German
    a. Er hat das Bild   von jemandem mitgenommen, aber das Bild   von wem,
        he has the picture of   somebody with.taken   but the picture of   who
        {da | *das}   redet er nicht drüber.
         there   dPR.N.SG.ACC talks he not   there.about
        He took the picture of somebody, but the picture of who he doesn't talk about.
    b. Er hat das Bild   von jemandem mitgenommen, aber das Bild   von wem,
        he has the picture of   somebody with.taken   but the picture of   who
        {darüber | *das}   redet er nicht.
         there.about   dPR.N.SG.ACC talks he not
        He took the picture of somebody, but the picture of who he doesn't talk about.

(61)   German
        *Er hat die Zeichnung von jemandem mitgenommen, aber die Zeichnung von wem,
        he has the drawing(F) of   somebody with.taken   but the drawing(F) of   who
        die   redet er nicht darüber.
        dPR.F.SG.ACC talks he not   there.about

The pattern of judgments clearly indicates that the fronted constituent may and must be a CP and cannot be a DP.

The paradigm here can be extended to make an argument from word order instead of the nature of the resumptive. Altmann 1981, section 10.2 notes that clausal arguments of prepositions cannot be topicalized in German but must be left dislocated. The characteristic property of left dislocation is the V3 order. Altmann's observation is illustrated in (62). The point to note is that in this class of cases, the finite verb in the main clause cannot directly follow the fronted clause.

(62)   German
        Was er will, {da   redet er | er redet da | *redet er da} nicht gerne drüber.
        what he wants   there talks he   he talks there   talks he there not   gladly dr.about
        What he wants, he doesn't like to talk about.

Observe now that the fronted constituent in the swamp construction behaves like a clause and not like any other kind of constituent in that the finite verb cannot immediately follow it:

(63)   German
        Er hat die Zeichnung von jemandem mitgenommen, aber die Zeichnung von wem,
        he has the drawing(F) of   somebody with.taken   but the drawing(F) of   who
        {da   redet er | er redet da | *redet er da} nicht drüber.
         there talks he   he talks there   talks he there not   dr.about

Again we see that, as in English, the swamp construction involves fronting of a CP rather than of a DP.

This subsection has provided evidence which bears on the question of whether the fronted constituent in Ross' example (1a) is the remnant alone, a DP, or whether it is a clausal constituent, a CP. The position according to which only the remnant is fronted is not supported by the facts. The facts point strongly to a structure with a fronted (elliptical) clause.

In this section we have tried to answer the questions raised by Bechhofer's and Abe's analyses of the swamp construction. Bechhofer's analysis, according to which the apparent sluice is a root and the apparent matrix is a parenthetical, cannot be maintained; binding and word order suggest true embedding. We found that Abe's claim that in Ross' example (1a) only the remnant, a DP, is fronted, while the CP is left in its canonical position, cannot be maintained either; the swamp construction involves a fronted clause, a CP, rather than merely a fronted remnant. Section 2 had already shown that Abe's approach overgenerates when it comes to the distribution of the swamp construction. Bechhofer's analysis, as far as can be determined, describes the distribution correctly. Putting together the results from both sections, we find that neither of the existing accounts satisfactorily deals with the properties of the swamp construction.

4 Swamp =Contrastive Left Dislocation cum Question Ellipsis

The previous sections have shown that neither of the existing accounts of the swamp construction is descriptively adequate. They have also established a number of facts that any successful analysis is responsible for. We have seen that the swamp construction involves subordination of the elliptical question, that the fronted constituent is an elliptical clause, and that the overall structure has a distribution limited to root contexts and coordinations of roots.

The proposed analysis for Ross' example (1a) is repeated below, (64). The analysis says that the remnant is left dislocated from its containing question. The question then elides. The analysis entails that the swamp construction relies on the simultaneous availability of contrastive left dislocation from a question and ellipsis of that question.

(64)
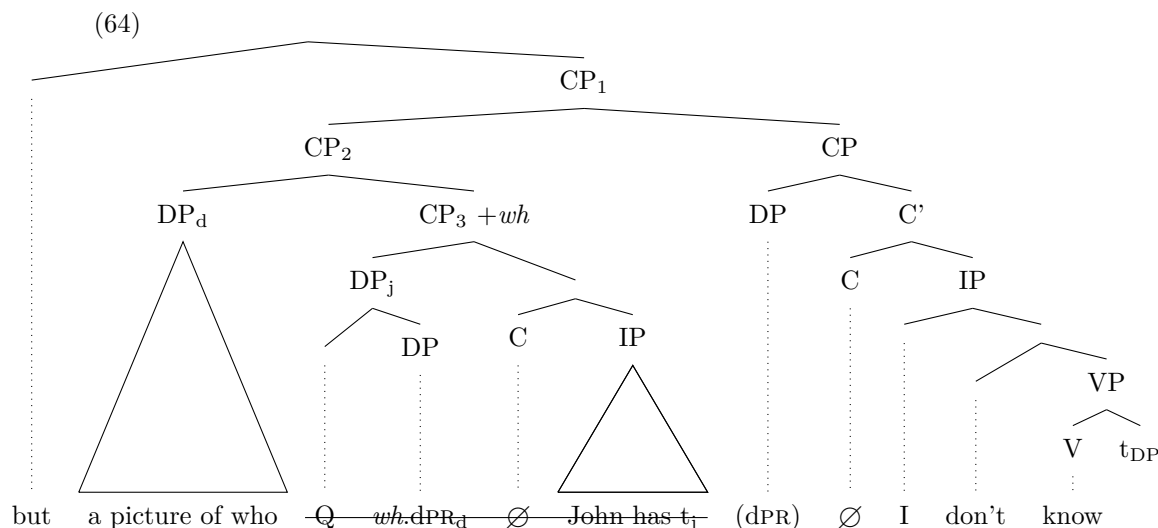
Both are available in unquestionable root structures and in contrastively left-dislocated questions under root coordination (for the latter, see (8b) above). Evidence pertaining to root questions comes from the following imagined dialogue between two detectives:

(65)   A: Wir wissen, wer das   Mädchen zuletzt gesehen hat.
                  we   know   who the.ACC.M.SG girl   last   seen   has
                  We know who last saw the girl.
      a.   B: Und den   Jungen?
                  and the.ACC.M.SG boy?
                  And the boy?
      b.   B: Und den   Jungen, wer hat den   zuletzt gesehen?
                  and the.ACC.M.SG boy   who has dPR.ACC.M.SG last   seen
                  And the boy, who has seen him last?

B's response in (65a) is entirely natural and can easily be interpreted as in (65b). This suggests
a derivation in terms of contrastive left dislocation followed by ellipsis of the question. Ellipsis
of the question is parallel to what we saw in (8b), which was used as initial motivation for the
current approach. Examples (8b) and (65) thus provide prima facie evidence for the availability
of both contrastive left dislocation and question ellipsis in root environments and in the type of
syntactic frame we find in Ross' example (1a).

   The structure of the rest of this section is as follows. I review case and binding connectivity
in contrastive left dislocation and contrast with hanging topic left dislocation. I then show that
examples (8b) and (65a) behave like contrastive left dislocation and in agreement with the
properties of the swamp construction established in the previous section. Finally it will be shown
that contrastive left dislocation with question ellipsis is not available in those contexts where the
swamp construction is impossible.

   Contrastive left dislocation in German (Frey's 2004 German Left Dislocation) is well known
for its connectivity effects (see Grewendorf 2009; Ott 2014, 2015). Indeed, Frey 2004 takes oblig-
atory case connectivity between dislocate and resumptive and binding connectivity to be the
crucial diagnostics distinguishing hanging topic left dislocation and contrastive left dislocation.[20]
Contrastive left dislocation, (66a), but not hanging topic left dislocation, (66b) shows obligatory
case matching between the left dislocate and the resumptive element.

(66)   a.   {Den | *Der}   Mann, den   kenne ich nicht.
             the.M.SG.ACC   the.M.SG.NOM man(M) dPR.M.SG.ACC know I   not
             The man, I don't know him.
       b.   {Den | Der   Mann, ich kenne ihn   nicht.
             the.M.SG.ACC   the.M.SG.NOM man(M) I   know him.M.SG.ACC not
             The man, I don't know him.

Furthermore, a quantifier in clause internal position can bind a variable in the left dislocate
under contrastive left dislocation, (67a), but not under hanging topic left dislocation, (67b).

(67)   a.   Seinen$_l$ Doktorvater, → den   verehrt jeder Linguist$_l$.[21]
             his   supervisor   dPR.M.SG.ACC admires every linguist
             Every linguist admires his supervisor.
       b.   *{Sein$_l$ | seinen$_l$ }   Doktorvater, jeder Linguist$_l$ verehrt ihn.
             his.M.SG.NOM   his.M.SG.NOM supervisor   every linguist admires him

_____

[20] This approach, which I adopt, breaks with the older tradition which sees a resumptive d-pronoun in the left
periphery of the clause and immediately following the left dislocate as the crucial diagnostic. Under Frey's (and
Grewendorf's, and Ott's) approach (8a) and (8b) are instances of contrastive left dislocation while under the older
approach they are (by definition) not.

[21] The arrow between left dislocate and resumptive pronoun is used in the literature to indicate the progredient
intonation typical of contrastive left dislocation.

These core properties also characterize contrastive left dislocation in questions. The possibility of contrastive left dislocation in questions, (68).[22]

(68) a. Seinem$_l$ Doktorvater, würde *(dem)   wenigstens ein Linguist$_l$ Geld
          his.M.SG.DAT supervisor   would dPR.M.SG.DAT at.least   one linguist money
          ausleihen?[23]
          lend
          Would at least one linguist$_l$ lend money to his$_l$ supervisor?   Frey (2004, ex. 17b)
      b. Den   Käse,   wann hat die Maus *(den)   gefressen?
          the.M.SG.ACC cheese(M) when has the mouse   dPR.M.SG.ACC eaten
          The cheese, when did the mouse eat it? CLD version from Haider 2010, p. 3 ex. 5d

Example (69) illustrates the possibility of variable binding into the left dislocate by a clause internal operator under contrastive left dislocation. Example (70)–(71) show that this is impossible under hanging topic left dislocation. The construal of the left dislocate as a hanging topic is forced in (70) by the lack of case matching between left dislocate and resumptive and in (71) by the form of the pronoun.

(69) a. Seinen$_n$ besten Freund, warum sollte   den   niemand$_n$ betrunken
          his.M.SG.ACC best   friend   why   should dPR.M.SG.ACC nobody   drunk
          autofahren lassen?
          car.drive   let
          Why should nobody let his best friend drive while under the influence?
      b. Seinen$_w$ besten Freund, wer$_w$ hat den   betrunken autofahren
          his.M.SG.ACC best   friend   who has dPR.M.SG.ACC nobody   drunk
          lassen?
          car.drive let
          Who let his best friend drive while under the influence?

(70) a. *Sein$_n$ bester Freund, warum sollte   den   niemand$_n$ betrunken
          his.M.SG.NOM best   friend   why   should dPR.M.SG.ACC nobody   drunk
          autofahren lassen?
          car.drive   let
          Why should nobody let his best friend drive while under the influence?
      b. *Sein$_w$ bester Freund, wer$_w$ hat den   betrunken autofahren
          his.M.SG.NOM best   friend   who has dPR.M.SG.ACC nobody   drunk
          lassen?
          car.drive let
          Who let his best friend drive while under the influence?

(71) a. Seinen$_n$ besten Freund, warum sollte   ihn   niemand$_n$ betrunken
          his.M.SG.ACC best   friend   why   should him.M.SG.ACC nobody   drunk
          autofahren lassen?
          car.drive   let
          Why should nobody let his best friend drive while under the influence?

---

[22] (68b) also shows that topicalization to the edge of a question is impossible in German (as in English, see (24) above).

[23] Without the resumptive d-pronoun, the example is, of course, acceptable as a declarative with topicalization and as a rising declarative – but not as a polar question.

      b. Seinen$_w$ besten Freund, wer$_w$ hat ihn   betrunken autofahren
          his.M.SG.ACC best   friend who has him.M.SG.ACC nobody   drunk
          lassen?
          car.drive let
          Who let his best friend drive while under the influence?

Contrastive left dislocation is also possible in questions that have been contrastively left dislocated under root coordination, that is, in syntactic frames that match Ross' example (1a) very closely. In the same context, hanging topic left dislocation is only marginally possible. This is shown in the full versions of (72a) and (72b). As expected, contrastive left dislocation does but hanging topic left dislocation does not allow binding of a variable in the left dislocate. The full versions of (73a) and (73b) illustrate this. The elliptical versions of the examples show furthermore that contrastive left dislocation does but hanging topic left dislocation does not feed ellipsis of the question.

(72)   a. Ich weiß, wer das   Handy   vergessen hat, aber den
          I   know who the.N.SG.ACC cellphone(N) forgotten has but the.M.SG.ACC
          Mantel, (wer den   vergessen hat), das   weiß ich nicht.
          coat(M) who dPR.M.SG.ACC forgotten has dPR.N.SG.ACC know I   not
          I know who forgot the cellphone, but I don't know who forgot the coat.
    b. ??Ich weiß, wer das   Handy   vergessen hat, aber der
          I   know who the.N.SG.ACC cellphone(N) forgotten has but the.M.SG.ACC
          Mantel, *(wer den   vergessen hat), das   weiß ich nicht.
          coat(M) who dPR.M.SG.ACC forgotten has dPR.N.SG.ACC know I   not
          I know who forgot the cellphone, but I don't know who forgot the coat.

(73)   a. Ich weiß, wer$_w$ seinem$_w$ Hund   teures   Futter kauft, aber seiner$_x$
          I   know who his.M.DAT.SG dog(M) expensive food buys but his.F.SG.DAT
          Katze, (wer$_x$ der   teures   Futter kauft), das weiß ich nicht.
          cat(F) who dPR.F.SG.DAT expensive food   buys   dPR know I   not
          I know who buys expensive food for his dog, but I don't know who buys expensive food for his cat.
    b. *Ich weiß, wer$_w$ seinem$_w$ Hund   teures   Futter kauft, aber seine$_x$
          I   know who his.M.DAT.SG dog(M) expensive food buys but his.F.SG.NOM
          Katze, (wer$_x$ der   teures   Futter kauft), das weiß ich nicht.
          cat(F) who dPR.F.SG.DAT expensive food   buys   dPR know I   not

The analysis of Ross' example (1a) then predicts that the swamp construction should have the characteristics of contrastive left dislocation: Case matching is predicted to be obligatory and binding into the dislocate should be possible. These expectations are borne out, as (74a) shows for case matching and (74b) for variable binding.

(74)   a. Er hat den   Steckbrief   von jemandem mitgenommen, aber
          He has the.M.SG.ACC wanted.poster(M) of   somebody with.taken,   but
          {*der | den}   Steckbrief   von wem, das   weiß
            the.M.SG.NOM the.M.SG.ACC wanted.poster(M) of   who dPR.N.SG.ACC know
          ich nicht.
          I   not
          He took the wanted poster of somebody, but the wanted poster of who, I don't know.

b.   Jeder Politiker$_p$ hat seinen$_p$ Besuch in einer Stadt abgesagt, aber
     every politician has his.M.SG.ACC visit(M) in one   city   cancelled but
     seinen$_p$ Besuch in welcher Stadt, das   weiß ich nicht.
     his.M.SG.ACC visit(M) in which   city   dPR.N.SG.ACC know I   not
     Every politician cancelled his visit to some city, but his visit to which city, I don't
     know.

The reconstructive properties of contrastive left dislocation also explain the embedding behavior
of the swamp construction, illustrated in (36a) above and repeated here as (75).

(75)   Everybody will have to take a picture of somebody, but a picture of who, nobody knows
         yet.

Pronouns in left dislocated declarative and interrogative clauses can be bound by an operator in
the matrix:

(76)   a.   Dass er$_n$ todkrank   ist, das   hat niemand$_n$ verraten.
            that he mortally.ill is dPR.N.SG.ACC has nobody   divulged
            Nobody$_n$ divulged that they$_n$ are mortally ill.
       b.   Warum er$_n$ so   ein Gesicht macht, das   hat niemand$_n$ verraten.
            why   he such a   face   makes dPR.N.SG.ACC has nobody   divulged
            Nobody$_n$ divulged why they$_n$ are making such a face.

The same effect also shows up under recursive left dislocation with and without clausal ellipsis,
(77).

(77)   Jede Krankenschwester$_k$ wusste, in welchen Mülleimer sie$_k$ die gebrauchten
         every nurse   knew   in which   bin   she the used
         Handschuhe werfen sollte, aber die gebrauchten Nadeln, (in welchen Mülleimer sie$_l$
         gloves   throw should but the used   needles in which   bin   she
         die   werfen sollte,) das   wusste keine$_l$.
         dPR.PL.ACC throw should dPR.N.SG.ACC know   none.
         Every nurse$_k$ knew in which bin she$_k$ had to throw the used gloves, but no nurse$_l$ knew
         in which bin she$_l$ had to throw the used needles.

   Notice that the word order of left dislocated questions is that of an embedded question,
matching our finding for English from section 2.1.
   In section 2 we showed that the swamp construction is impossible in selected complement
questions, in extraposed questions, in subject questions, in unselected embedded questions, and
under embedded coordination. In German, indirect questions resist embedded root phenomena
such as embedded V2, (78).

(78)   a.   Niemand$_n$ {weiss | fragt sich | erinnert   sich | hat darüber   nachgedacht},
            nobody   knows   asks self remembers self   has there.about after.thought
            wann er$_n$ den Jungen zuletzt gesehen hat.
            when he the boy   last   seen   has
            Nobody$_n$ {knows|wonders|remembers|has thought about} when he$_n$ last saw the
            boy.
       b.   *Niemand$_n$ {weiss | fragt sich | erinnert   sich | hat darüber   nachgedacht},
            nobody   knows   asks self remembers self   has there.about after.thought
            wann hat er$_n$ den Jungen zuletzt gesehen.
            when has he the boy   last   seen

*Nobody$_n$ {knows|wonders|remembers|has thought about} when did he$_n$ last see the boy.

Given this, it might be somewhat surprising that contrastive left dislocation is not incompatible embedded questions – at least not categorically so. Thus, while (79) is certainly marked and maybe somewhat degraded, it lacks the sharp ungrammaticality of (78b).

(79)   Niemand$_n$ {weiss | fragt sich | erinnert   sich | hat darüber   nachgedacht},
        nobody   knows asks self   remembers self   has there.about after.thought
        den   Jungen, wann er$_n$ den   zuletzt gesehen hat.
        the.M.SG.ACC boy(M) when he dPR.M.SG.ACC last   seen   has
        Nobody$_n$ {knows|wonders|remembers|has thought about} when he$_n$ last saw the boy.

However, ellipsis of the question is categorically impossible impossible in cases like these, (80).

(80)   *Jeder$_j$ weiss, wann er$_j$ das Mädchen zuletzt gesehen hat, aber niemand$_n$ {weiss |
        everyone knows when he the girl   last   seen   has but nobody   knows
        fragt sich | erinnert   sich | hat darüber   nachgedacht}, den   Jungen.
        asks self remembers self   has there.about after.thought the.M.SG.ACC boy(M)

The same categorical ungrammaticality also obtains when contrastive left dislocation is combined with ellipsis of the question in the other contexts mentioned above: embedded coordination in (81a), extraposed question in (81b), subject question in (81c), and unselected embedded question in (81d).

(81)   a. *Die Berichte, dass ich zwar   wisse,   wer das Mädchen zuletzt gesehen hat,
            the reports   that I   though know.SBJV who the girl   last   seen   has
            aber den Jungen, dass ich das nicht wisse,   stören mich.
            but the boy   that I   that not   know.SBJV annoy me.
            intended: The reports that I know who last saw the girl I don't know who last saw
            the boy annoy me.
        b. *Jede Student-in hat entschieden, der   Klara, was sie   der
            every student-F has decided   the.F.SG.DAT what she dPR.F.SG.DAT to.the
            zum   Abschied   schenkt, aber keine   Student-in hat   bisher
            good-bye give.as.present but   no   student-F has   so.far there-R-about
            da-r-über nachgedacht, dem   Hans.
            thought   the.M.DAT.SG Hans(M)
        c. *Wer die Mädchen begleitet   ist klar, aber die Jungen hängt   noch von
            who the girls   accompanies is clear but the boys   depends still from
            vielen Unbekannten ab.
            many unknowns   PRT
        d. *Jeder   hat erzählt, wem er seine Zeichnung von Brandt geben will,   aber
            everybody has told   who he his   drawing   of Brandt give   wants but
            niemand$_n$ hat verraten, seine$_n$ Zeichnung von Kohl.
            nobody   has disclosed his.F.SG.ACC drawing(F) of   Kohl

Without ellipsis of the question, contrastive left dislocation to the edge of the question in the examples above is sometimes more and sometimes less marked. We need not pursue the exact status of such examples since the important observation for us is that contrastive left dislocation in conjunction with ellipsis of the question is sharply ungrammatical.

So far, this section has established the following points. German allows contrastive left dislocation and hanging topic left dislocation but not topicalization from questions. Contrastive left dislocation can in addition co-occur with ellipsis of declarative and interrogative clauses.[24] We have seen that the connectivity effects of contrastive left dislocation match the embedding properties we observed for the swamp construction in section 2.1 and the distribution of interrogative ellipsis matches that of the swamp construction (section 2). These facts strongly suggest unifying the two phenomena, which is what the current analysis does.

The argumentation in this section up to this point builds entirely on observational parallels between contrastive left dislocation coupled with question ellipsis on the one hand and the swamp construction on the other hand. We have not committed to a particular analysis of contrastive left dislocation. It is worth asking what the present analysis of the swamp construction tells us about the theory of contrastive left dislocation. As far as I can tell, the present approach to the swamp construction is most easily compatible with theories of contrastive left dislocation according to which the left dislocate and the resumptive form a chain, either a base generated one or a movement derived one. However, the current analysis seem incompatible with Ott's recent, elegant approach to contrastive left dislocation in terms of clausal ellipsis. I briefly discuss Ott's analysis in the next subsection, which can be skipped by readers not interested in the details of the analysis of contrastive left dislocation.

4.1 Aside on Ott 2014

The following paragraphs discuss Ott's approach to contrastive left dislocation. After a very brief summary of Ott's idea, I show that its conceptual appeal is weaker than might seem at first. I then explain why it is difficult to reconcile Ott's analysis with the current approach to the swamp construction. Finally, I point to a number of empirical challenges that Ott's proposal faces and which can be traced directly to the biclausal, elliptical structure that underlies contrastive left dislocation according to Ott. This subsection does not advance the analysis of the swamp construction further.

Ott suggests that the reconstructive properties of contrastive left dislocation and the fact that contrastive left dislocation violates V2 can be understood if we assign the following structure to example of contrastive left dislocation:

(82) $[_{CP1}$ den Jungen $[_{\alpha 1}$ ~~haben wir gesehen~~ $]]$ $[_{CP2}$ den $[_{\alpha 2}$ haben wir gesehen $]]$
            the boy   have we seen   that   have we seen

The structure involves two juxtaposed clauses (CP_1 and CP_2). The left dislocate undergoes regular topicalization in CP_1 and $\alpha 1$ deletes under identity with $\alpha 2$. This setup directly explains case matching and binding connectivity: Case matching follows from the fact that $\alpha 1$ and $\alpha 2$ must be identical to license ellipsis. Binding connectivity follows from the fact that the left dislocate is simply topicalized and the independently true observation that topicalization reconstructs for variable binding.

It should be clear why it is difficult to reconcile the current analysis of the swamp construction in terms of contrastive left dislocation with Ott's approach: There is no plausible well-formed clausal source that could play the role of CP_1. Topicalization of *wh*-phrases in German is highly restricted (see Reis and Rosengren 1992) and topicalization from questions is impossible (see above).

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[24] The only previous discussion of this ellipsis possibility for declratives that I am aware of is Ott's 2015 brief comment on embedded fragments.

More traditional approaches assume that the left dislocate c-commands the resumptive pronoun (see (10)) while being in some sense external to the CP containing it. In (10) I have chose to represent this as adjunction. In such approaches the left dislocate is either moved from the position of the resumptive or binds it in a base generated chain. One of the main conceptual advantages of Ott's approach is that it avoids having to stipulated otherwise unmotivated big DPs (see for example Grewendorf and Kremers 2009) of the type *den den Jungen* or 'reconstruction' into bound pronouns.

Ott's conceptual argument that under binding approaches contrastive left dislocation requires a sui generis pronoun with mysterious and otherwise unattested reconstructive properties is substantially weakened by the fact that semantic reconstruction into a pronoun is necessary independently for prolepsis constructions, as documented carefully in Salzmann 2006. There is no plausible account of prolepsis in terms of ellipsis so that postulating the type of pronoun whose existence Ott objects to is independently necessary.

I would now like to mention a number of over- and undergeneration issues confronting Ott's theory and a paradox it gives rise to. Starting with overgeneration, it is unclear how any of the following ungrammatical examples are rule out by Ott's theory:

(83)   a.   Den   Kuchen, den   hat Peter gegessen.
            the.M.SG.ACC cake(M) dPR.M.SG.ACC has Peter eaten
            The cake, Peter has eaten it.
       b.   *Den Kuchen, Peter hat gegessen.
            the cake   Peter has eaten
       c.   *Den   Kuchen, die Glasur von dem   hat Peter gegessen
            the.M.SG.ACC cake,   the glazing of dPR.M.SG.DAT has Peter eaten
       d.   *Den Keks,   den Kuchen hat Peter gegessen.
            the cookie, the cake   has Peter eaten.
       e.   *Seinen₁ Doktorvater {diesen | diesen Mann} verehrt jeder Linguist₁
            his   supervisor   that.one that   man   admires every linguist
            Frey 2004, ex. 6, 5b

What these examples have in common is that the left dislocate is not in the right kind of relation to a d-pronoun in the clause internal position. (83b) is modeled on sprouting examples familiar from sluicing. There is no d-pronoun in the clause. The sentence radical of the elliptical first clause would be something like *Peter has eaten x*, which should be elidable under identity with *Peter has eaten*. In (83c), there is a d-pronoun but it is in the wrong case and it receives the wrong thematic interpretation, yet the pronounced and elided sentence radicals, *Peter has eaten x*, are identical. The same applies to (83e). Finally, it is mysterious why contrastive left dislocation requires a specific form of the resumptive and is impossible with non-d-pronouns or full noun phrases, (83e). As far as I can tell, Ott's semantic identity condition on ellipsis is incapable of capturing these effects. Whether the phrase corresponding to the left dislocate is absent, (83b), a different noun phrase, (83c–d), or a pronoun other than a weak d-pronoun, (83e), the elided constituent always has the same semantic content as in the acceptable example (83a).

These issues can be solved if a direct relation between the left dislocate and the d-pronoun is assumed, as in the traditional approaches. Note that such problems might also find a solution under an approach to ellipsis identity relying on questions under discussion rather than on

semantic identity.[25] For example, a statement about who ate the cake ((83d)) would have to be prevented from raising the question of who ate the cookie, etc.

In addition to these overgeneration issues that stem from the absence of a direct relation between the left dislocate and the d-pronoun, there are also some problems of undergeneration. I illustrate this with two cases which have in common that contrastive left dislocation is possible in contexts where topicalization is not.

First, we have seen that contrastive left dislocation is possible in questions, (68)–(69) - both in polar questions and in *wh*-questions. The examples in (68) also demonstrated that topicalization from questions is ill-formed. A relevant example (Haider 2010, p. 3 ex. 5e and discussed in Ott 2014, p. 274 ex. 10b) is given below.

(84)   Den   Käse, hat die Maus den   gegessen?
        the.M.ACC.SG cheese has the mouse dPR.M.SG.ACC eaten
        The cheese, has the mouse eaten it?

The pre-elliptical structure cannot take the form in (85a), because the pre-elliptical structure involves topicalization from a question, which is ill-formed. But the pre-elliptical structure cannot be (85b) either, because it is pragmatically very odd to first assert that the mouse has eaten the cheese and then ask whether the mouse has indeed eaten it.

(85)   a. *The cheese, has the mouse eaten? Has the mouse eaten it?
        b. #The cheese, the mouse has eaten. Has the mouse eaten it?

Thus Ott's approach does not seem to provide an analysis of all the examples that, under Ott's own assumptions, it is responsible for.[26]

Second, Altmann 1981, section 10.2 notes that clausal arguments of verbs in the dative and genitive as well as clausal arguments of prepositions cannot be topicalized. The only way to front them is to contrastively left dislocate them (see also Frey 2016; Wiltschko 1997 for discussion).

(86)   a. Wem   angesichts des Gefummels im   Schnee Zweifel kommen,
            who.DAT in.view.of the fumbling   in.the snow   doubts come,
            *(dem)   kann *(*dem)   mit philosophischer Krisenabwehr
             dPR.M.SG.DAT can   dPR.M.SG.DAT with philosophical   crisis.management
            gedient werden.
            helped be
            Who is becoming doubtful in view of the fumbling in the snow can be helped with
            some philosophical crisis management.   Altmann 1981, p. 171 ex. 10.56
        b. Dass der Frosch ein Prinz ist, *(dessen)   war *(*dessen)   sich die
            that the frog   a   prince is   dPR.N.SG.GEN was   dPR.N.SG.GEN self the
            Prinzessin nicht bewusst.
            princess   not aware
            The princess wasn't aware that the frog was a prince. Wiltschko 1997, p. 313 ex. 17

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[25] Such an approach might also be able to deal with Frey's (2004) example (18), which shows that contrastive left dislocation is not only sensitive to the identity of the resumptive element but also to its position. Again it is hard to see how Ott's theory as stated could deal with this kind of effect.

[26] One can imagine solving this problem by invoking ∃-closure for a polarity operator, so that the interpretation of the elliptical clause would be *the mouse has or has not eaten x*. I leave it to proponents of Ott's account to try to defend this or any other solution to the problem raised by (84).

    c.   Dass der Frosch ein Prinz ist, *(damit)   hatte *(*damit)   die Prinzessin
          that the frog   a   pince is   there.with had   there.with the princess
          nicht gerechnet.
          not   reckoned
          The princess did not expect the frog to be a prince.

The problem here is that Ott needs the topicalization versions (with V2) of the above examples as the sources for ellipsis. But they are systematically ungrammatical. Ott's theory can therefore not generate the left dislocation versions, as they are based on ungrammatical sources.[27]

Consider finally the following examples, which give rise to a paradox under Ott's account.

(87)   a.   Seinem$_d$ Doktorvater, weil   dem   kein Doktorand$_d$ traut,
          his.M.SG.DAT supervisor(M) because dPR.M.SG.DAT no   PhD.student trusts
          (darum) ist die Institutsdirektorin   böse.
           there.for is the institute.director(F) angry
          The director of the institute is angry because no Ph.D. student$_d$ trusts his$_d$ super-
          visor.
   b.   Seinem$_d$ Doktorvater, weil   die Institutsdirektorin dem   nicht
          his.M.SG.DAT supervisor(M) because the institute.director(F) dPR.M.SG.DAT not
          traut, (deshalb) ist jeder Doktorand$_d$ böse.
          trusts there.for is every PhD.student angry.
          Every Ph.D. student$_d$ is angry because the director of the institute does not trust
          his$_d$ supervisor.

(88)   a.   Seinem$_d$ Doktorvater, die Institutsdirektorin   ist böse, weil
          his.M.SG.DAT supervisor(M) the institute.director(F) is angry because
          dem   kein Doktorand$_d$ traut.
          dPR.M.SG.DAT no   PhD.student trusts
   b.   Seinem$_d$ Doktorvater, jeder Doktorand$_d$ ist böse, weil   die
          his.M.SG.DAT supervisor(M) every PhD.student is angry because the
          Institutsdirektorin dem   nicht traut.
          institute.director(F) dPR.M.SG.DAT not   trusts

In my judgment, the examples in (87) do but those in (88) do not allow a bound interpretation of the possessive pronoun. Under the present account, these data simply demonstrate that contrastive left dislocation is island sensitive. In (87) no island boundary is crossed since the left dislocate is at the edge of but not outside of the island. The examples in (88) by contrast require the island boundary to be crossed. My judgments are in line with the conclusions reached in Frey 2004 and Ott 2015. According to Frey and Ott contrastive left dislocation is island sensitive.[28]

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[27] Frey 2016 suggests that the ungrammaticality in such cases arises from contradictory linearization requirements in a theory along the lines of Fox and Pesetsky 2003. This idea provides a way of solving this problem on the plausible assumption that such linearization statements are deleted under ellipsis.

[28] While there is agreement that contrastive left dislocation with full overt movement of the d-pronoun is sensitive to islands, the status of contrastive left dislocation with the d-pronoun not adjacent to the left dislocate, that is, the cases that can be diagnosed as contrastive left dislocation only indirectly, is not settled. Thus, Grewendorf 2009 disagrees with Frey's judgments on the crucial island violating examples. I have nothing to say about this point of variation. However, Grewendorf's additional arguments for the island insensitivity of contrastive left dislocation strike me as unconvincing. One of them (Grewendorf's examples (39) and (41a)) involve structure of the type in (87), which, as we just saw, have an independent explanation. Then there is a deviant example (Grewendorf's (40)), whose status Grewendorf attributes to condition C. To my ear, the example is bad under the intonation required for contrastive left dislocation independently of condition C. Grewendorf's third argument is based on the unfounded (see Altmann 1981, p. 340) assumption that PPs in German can never function as hanging topics.

The examples create a paradox for Ott. To explain (87) – and in particular (87b) – Ott will have to invoke island repair by ellipsis: The pre-ellptical structures for (87) are given in (89). They involve illicit topicalization from an adjunct island. Problematically, the same pre-elliptical structures should then also license the examples in (88).

(89)   a. *his supervisor, the director of the institute is angry, because no Ph.D. student trusts
            _____.

        b. *his supervisor, every Ph.D. student is angry, because the director of the institute
            does not trust _____.[29]

It is difficult to see how (87) and (88) could be distinguished under Ott's approach. They create a paradox because to account for the facts, Ott has to allow and disallow island repair by ellipsis.

This subsection has shown that Ott's theory of contrastive left dislocation, though simple and elegant, faces a number of empirical problems. The combined weight of these problems suggest that Ott's theory needs to be abandoned quite independently of the considerations having to do with the swamp construction.

5 Loose ends

This section is divided into two parts. The first part addresses the question of how the structure in (10) can be interpreted. Specifically, I ask how CP_2 ends up with a question denotation. I show that ideas in Sternefeld 2001 on scope marking and in Sternefeld 2001 and Cable 2010 on pied-piping already give us an answer to this question. In the second part of the section, I address the question of why ellipsis of CP_3 in (10) is obligatory. Here, I adopt the idea from Kennedy 2003; Kennedy and Merchant 2000; Merchant 2001 that morphological gaps can be repaired by phrasal ellipsis and can force ellipsis. This idea will also explain how English can have the swamp construction without having German style contrastive left dislocation overtly.

5.1 On the interpretation of the swamp construction

Under the type of approach to contrastive left dislocated adopted here, the left dislocate c-commands the d-pronoun. To guarantee the correct interpretation for standard examples, the left dislocate must reconstruct semantically into the d-pronoun and, ultimately, into the d-pronoun's base position. This is true independently of the precise derivational history of the examples, that is, independently of whether contrastive left dislocation is movement derived or base generated. For concreteness, I assume that this is achieved through lambda-binding. Thus, an example like (67a) will be interpreted schematically on the basis of something like (90).

To understand the variation, more work is clearly needed. However, for speakers with recursive contrastive left dislocation of the type in (87) for whom the process is island sensitive, that is form whom (88) is bad on the bound interpretation, the paradox mentioned in the text arises.

[29] There might be a short pre-elliptical structure for (87a) of the type *his supervisor, no Ph.D. student trusts _____*. This would allow the island to be evaded (in the sense of Barros, Elliott, and Thoms 2014) rather than being repaired. Such a short source is not available in for (87b), which thus requires island repair for Ott.

(90)
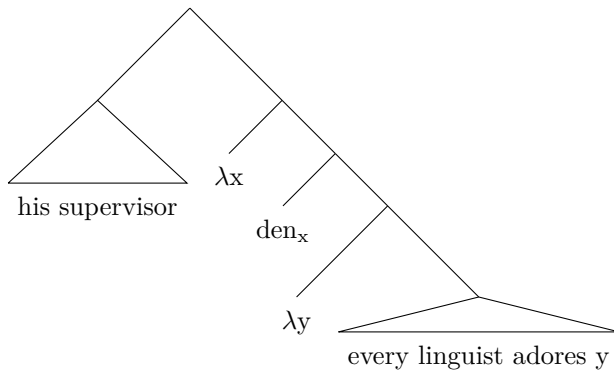
Contrastive left dislocation into questions, imperatives, etc. is interpretively unproblematic under these (trivial) assumptions.

Following Cable 2010; Sternefeld 2001 among others, I assume that a *wh*-phrase contains two syntactically distinct elements that contribute to its functioning: a *wh*-word, whose function it is to introduce a set (of alternatives), and a Q-morpheme c-commanding the *wh*-word, whose function it is to contribute quantificational force. In *wh*-movement languages, *wh*-phrases in Spec,CP have the Q-morpheme at their edge and the *wh*-word within its complement: [Q [...*wh*...]].

In this kind of system, there is no semantic constraint on the distance between the Q-morpheme and the *wh*-word; as far as the semantics is concerned, they can be arbitrarily far from each other. Sternefeld 2001 uses this property to address Stechow's (1996) famous and otherwise lethal objection to to Nishigauchi's (1990) idea that island insensitivity of *wh*-questions in Japanese stems from covert island pied-piping. Cable 2010 uses this same property to describe massive pied-piping structures in a number of languages. Language particular constraints on pied-piping can be coded as syntactic constraints on the distance between the Q-morpheme and the *wh*-word it associates with.

Consider now CP_2 within the structure (10) for Ross' example. CP_2 is interpreted as a question. The left dislocate is a DP containing a *wh*-word. This DP – with a Q-morpheme adjoined and placed in Spec,CP – would lead to the intended interpretation in the Cable 2010; Sternefeld 2001 systems. However, such placement is syntactically impossible in English, due to language specific constraints on pied-piping. Recall now that under contrastive left dislocation, the left dislocate is semantically reconstructed by binding a d-pronoun. The d-pronoun within CP_2 is the sister of the Q-morpheme. Together they occupy Spec,CP. Semantically, the d-pronoun acts as a variable of the required semantic type, here, a set of individuals. This is the type of its binder, a phrase containing a *wh*-word, and the type required by the Q-morpheme. Indeed, this d-pronoun must be a *wh*-word also syntactically, since a locally introduced *wh*-feature is required to satisfy the requirements of the Q-morpheme. There is nothing syntactically or semantically out of the ordinary here. The crucial idea is simply to treat the sister of the Q-morpheme as a variable bound by a phrase with *wh*-semantics. This idea was developed by Sternefeld 2001 in his account of *wh*-scope marking. The current account employs only these independently justified mechanisms without having to add anything new.

In this subsection I have sketched what type of assumptions about the syntax and semantics of pied-piping can be made to ensure that (10) is syntactically well-formed and fully interpretable while at the same time retaining the tools to rule out massive pied-piping in the general case.

5.2 Why is ellipsis obligatory?

The issue to be addressed in this subsection is the question of why ellipsis is obligatory in the swamp construction. The structure, I have argued, is both syntactically and semantically well-formed. So why can it not be pronounced? The leading idea I use to answer this question comes from Kennedy 2003; Kennedy and Merchant 2000; Merchant 2001, who suggest that the morphology, the lexicon of a language, can sometimes force ellipsis. More speculatively, this idea will be extended to explain why English lacks contrastive left dislocation in full clauses but allows it under ellipsis in the swamp construction.

Kennedy and Merchant discuss the following type of data. They observe that (91a) is ungrammatical because of a left-branch violation and that (91b) is grammatical and is interpreted as though it had the structure in (91c), which again violates the left branch condition.

(91)   a. *The Cubs start a more talented infield than the Sox start an outfield.
        b.   The Cubs start a more talented infield than the Sox do.
        c.   The Cubs start a more talented infield OP$_i$ [than the Sox do [$_{VP}$ start [$_{DP}$ an t$_i$ infield]]].

In view of the fact that other languages do allow left branch extraction and guided by the idea that linguistic variation is ultimately lexical, Kennedy and Merchant propose that languages that allow left branch extraction overtly do but languages that do not allow it do not have a morpheme that allows extraction of DegP from the edge of DP. The relevant notion of a morpheme is (roughly) that of a stable correspondence between a bundle of syntactic/semantic features and a phonological representation (which might, of course, be null).

In late lexical insertion models (like distributed morphology or nano-syntax) it is plausible to assume that such morphological gaps might lead to a morphological crash of the derivation and ineffability of the corresponding syntactic structure, even in cases where the syntactic structure itself is well-formed: When the morphology cannot successfully complete lexical insertion, the derivation is canceled. Arguably, this is what happens with a class of defective verbs in Russian which lack first person singular non-past forms. This fact is illustrated in the following table for the two verbs *buzit'*–'make a fuss' and *šelestet* –'rustle' (extracted from Baerman, Brown, and Corbett 2009 with similar non-defective verbs for comparison).

	z – ž		st - šč	
	buzit'	porazit'	šelestet	pustit
	'make a fuss'	'strike'	'rustle'	'release'
1^{st}SG	——	poražu	——	puščtu
2^{nd}SG	buziš	poraziš	šelestiš	pustiš
3^{rd}SG	buzit	porazit	šelestit	pustit
1^{st}PL	buzim	porazim	šelestim	pustim
2^{nd}PL	buzite	porazite	šelestite	pustite
3^{rd}PL	buzjat	porazjat	šelestjat	pustjat

(92)

Of course, there are presumably well-formed syntactic structures that would require the absent forms, but they are ineffable.

Returning to Kennedy and Merchant 2000, they suggest that the effect of ineffability caused by morphological gaps can be repaired by ellipsis. This follows quite directly if we assume that elliptical structures do not require morphological insertion at the ellipsis site. We have just seen that certain Russian verbs lack first person singular forms. Now consider the following examples of stripping in Russian (E. Titov, N. Slioussar, p.c.):

(93)   On {buzit | šelestit}, a   ja net.
       he   makes.a.fuss   rustles,   but I   not
       He {makes a fuss | rustles} but me not.

On the assumption that stripping in Russian involves syntactically full fledged but elliptical structure, these examples serve to confirm Kennedy and Merchant's conjecture: The ineffability of *I {make a fuss | rustle}.* caused by a morphological gap is repaired by ellipsis. In other words, these examples suggest that ellipsis indeed counterfeeds morphological insertion.

Kennedy and Merchant 2000 apply the same idea to left branch extraction under VP ellipsis. Left branch extraction is blocked in English by the absence of the relevant morpheme in the language that would allow movement of the DegP from the edge of DP. The syntactic structure as such, on the other hand, is well-formed. VP ellipsis again counterfeeds lexical insertion avoiding the morphological crash.

I propose that the same explanation should also be given to the puzzle of why clausal ellipsis under contrastive left dislocation becomes obligatory in the swamp construction: The sister of the Q-morpheme in (10) has simultaneous properties of a *wh*-word and of a bound d-pronoun. On the assumption that neither English nor German have the relevant morpheme in their lexicon, the non-elliptical version of CP_2 is ineffable. Moreover, there is no process eliding *wh*-phrases in Spec,CP. Therefore, any elliptical process salvaging CP_2 will minimally have to target CP_3 – and this, thanks to the independent availability of this ellipsis process, is exactly what we find.

For German, all we need to assume is that it lacks a *wh*.dPR morphologically to explain why question ellipsis is obligatory in the swamp construction but generally optional under contrastive left dislocation. English lacks contrastive left dislocation, but still has the swamp construction. How come? I would like to propose that English lacks d-pronouns morphologically altogether, which means that contrastive left dislocation is possible only under ellipsis. This idea would fit nicely with the suggestion in Ott 2015, according to whom fragments might be the residue of contrastive left dislocation coupled with clausal ellipsis.

In this section I have addressed two loose ends: How is (10) interpreted? And why is ellipsis of CP_2 in (10) obligatory? I have suggested that the literature on scope marking and on the interpretation of pied-piping already contains all the tools needed to answer the first question. I then suggested in line with Kennedy and Merchant 2000 that the impossibility of pronouncing CP_3 in (10) should be viewed as ineffability caused by a morphological gap. Specifically, there is no morpheme that would simultaneously spell out the *wh*-feature on the Q-morpheme's sister and the features that make it a (bound) d-pronoun. I also suggested that the same type of account might explain why German does but English does not have an overt contrastive left dislocation structure.

6 Conclusions and outlook

This paper has proposed an analysis of Ross' example (1a) with four key ingredients: (i) The analysis involves recursive contrastive left dislocation. (ii) It invokes contrastive left dislocation from a question. (iii) It capitalizes on the possibility of eliding a contrastively left dislocated clause that has itself been dislocated from. (iv) Finally, it invokes contrastive left dislocation of a phrase containing an unscoped *wh*-word. (i)–(iii) are independently available in German. The assumption in (iv) does not raise any interpretive difficulties and, I have suggested, explains why ellipsis is obligatory. The analysis is extremely well supported for German, Somewhat speculatively, I suggest that it should be applied to English as well.

Descriptively, the paper offers the first in depth study of the swamp construction in German and English and the first description of left dislocation with clausal ellipsis.

Analytically, we have seen that neither Bechhofer's nor Abe's analyses of the swamp construction are adequate and should be given up. Abe suggests that the success of his approach in deriving an analysis of the swamp construction furnishes a strong argument for that very approach. The fact that this analysis, which Abe claims to follow naturally from his general approach, is fundamentally flawed should probably then count as an argument against Abe's in-situ approach to ellipsis.

The theoretical ramifications do not stop here, of course. We saw in the introduction that *wh*-move-and-delete accounts of sluicing derive the corollary that only *wh*-moveable constituents can be sluicing remnants. *Wh*-move-and-delete analyses can be contrasted with semantic/pragmatic approaches. The latter typically adhere to a what-you-hear-is-what-you-get philosophy and posit no (contextually variable) syntactic structure at the ellipsis site and, in particular, no *wh*-movement within the ellipsis site. Such theories do not derive the corollary that only *wh*-moveable constituents can be sluicing remnants. Instead, they have as their fundamental corollary that (all and) only constituents that can be interpreted as *wh*-phrases can be sluicing remnants. The classes of constituents picked out as potential sluicing remnants in the two types of theories are different. Cross-linguistic work on pied-piping (see for example Cable 2010; Heck 2008) has always suggested that interpretability is too weak a constraint. The swamp construction drives this point home: The DP remnant in Ross' example (1a) and the VP remnant in Abe's example (6a) can give rise to a question interpretation quite easily (see section 5.1), yet, they are not possible sluicing remnants. It is difficult to see how semantic/pragmatic approaches to ellipsis can deal with these facts without adopting many of the assumptions of *wh*-move-and-delete approaches to ellipsis.

To conclude, I would like to mention three directions in which this analysis might be extended. First, it seems like an interesting question to ask (see Ott 2015) if (some or all) fragments can be analyzed as cases of contrastive left dislocation with clausal ellipsis. The largest immediate stumbling block for such an extension are the kinds of facts discussed in Weir 2014b, chapter 4 as arguments for the PF-movement analysis of fragments.[30]

Second, there is a fairly good correspondence between contrastive left dislocation and right dislocation in German. However, while contrastive left dislocation is restricted to d-pronouns as resumptive elements, right dislocation is not. Right dislocation also occurs with regular pronouns and full noun phrases:

(94)   {Den | Ihn | Den Typen da   drüben} kenne ich gut, den Mann aus
          That.M.SG.ACC him   the guy   there yonder know I   well the man   from
        Wiesbaden.
        Wiesbaden
        I know {him | the guy over there} well, the man from Wiesbaden.

Given the general correspondence between contrastive left dislocation and right dislocation, one might wonder whether there are also right dislocation versions of the swamp construction. Of course, right and left dislocation with clausal ellipsis are very difficult if not impossible to distinguish. However, since there is no requirement for a d-pronoun to appear in right dislocation structures, we might expect to be able to construct non-elliptical versions with regular *wh*-phrases. It would then be interesting to probe the acceptability, distribution, and interpretation of structures like the following to assess whether these might be the non-elliptical right dislocation variants of the swamp construction:

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[30] A contrastive left dislocation analysis of fragments is immediately compatible, however, with evidence for overt movement in fragment answers (see Shen to appear), and with connectivity effects.

(95) a. Ich frage   mich, was   er gekauft hat, ein Bild   von wem.
          I   wonder self   what he bought has a   picture of   who
          I wonder what he bought, a picture of who.
      b. Er war den ganzen Tag im   Einkaufszentrum. I frage   mich, warum er da
          he was the whole   day in.the mall   I wonder self   why   he there
          war, um   dort was   zu erledigen.
          was in.order there what to achieve
          He was the whole day at the mall. I wonder why he was there, to achieve what.

Finally, the question of the cross-linguistic distribution of the swamp construction arises. Do other languages have the swamp construction? Does the swamp construction in those languages also show signs of being left dislocation in disguise? A first hint that this might be so comes from Spanish and Swedish. In both languages, renditions of Ross' example are possible but require left dislocation of the interrogative clause. This is marked by a d-pronoun in Swedish and a clitic in Spanish.

This paper has three appendices. The first appendix provides a set of data from English showing that the properties established for the swamp construction in this paper on the basis of DPs of the type *a picture of who* as the remnant also hold when we look at remnants like *doing what* from Abe's example (6a). While there are speakers who accept pied-piping of *a picture of who* in questions and sluices, all speakers appear to reject pied-piping of *doing what*. For the more accepting speakers, the logic of the argumentation in this paper can be recreated on the basis of the examples in the appendix.The second appendix provides data concerning the swamp construction in German both with nominal and with verbal remnants. The appendix establishes nearly identical behavior between the German and the English swamp constructions, which is, of course, what the current analysis predicts. Both the nominal and the verbal versions of the data are presented to ward against the worry that speakers with more liberal pied-piping might otherwise feel. The third appendix discusses Abe's in-situ theory of sluicing with the particular aim to assess whether Abe derives the generalization that only *wh*-movable constituents can be sluicing remnants. The conclusion is negative.

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Appendix I: Verbal remnants in the swamp construction in English

We first look at some basic distributional facts concerning the swamp construction with *doing what.* Swamp with *doing what* is impossible under embedded coordination, (96a), subject clauses, (96b), extraposed subject clauses, (96c), and in unselected embedded questions, (96d).

(96) a. *The fact that he spent the entire day doing something at the mall but (that) doing what we don't know is disconcerting.
    b. *He spent the entire day doing something at the mall, but doing what is surprising.
    c. *He spent the entire day doing something at the mall, but it is surprising doing what.
    d. *He spent the entire day doing something at the mall, but the security guard wouldn't tell me doing what.

VP topicalization from indirect questions is marginal but impossible from sluices, (97).

(97) Joe buys the New York Times, but read it I don't know who *(?? does)

The swamp construction is impossible in environments that allow embedded topicalization and disallow embedded left dislocation (see (28) above):

(98) a. *He spent the entire day doing something at the mall, but I sure am glad that doing what nobody knows.
    b. *He spent the entire day doing something at the mall, but you never told us that doing what nobody knows.

Next, we show, using binding into the elided question, (99), that the swamp construction with *doing what* is embedded rather than being the host of a parenthetical.

(99) Everybody will have to spend the entire day doing something at the mall, but doing what nobody knows yet.

    =   ...nobody$_n$ knows what he$_n$ will spend the day at the mall doing.

   Finally, we show that the fronted constituent in the swamp construction with *doing what* is a CP not a VP by showing that it is suppressed in contexts where CPs cannot be fronted, (100)–(101).

(100) *He spent the entire day doing something at the mall but doing what it is unclear.

(101) He spent the entire day doing something at the mall.
    a. Doing what, the juror wondered.
    b. *Doing what, the juror discovered.
    The defendant spent the entire day doing something at the mall.
    a. Doing what, the prosecutor asked.
    b. *Doing what, the prosecutor determined.

The swamp construction with *doing what* behaves like the version with *a picture of who* in all respects studied here.

Appendix II: The swamp construction in German

We first look at some basic distributional facts concerning the swamp construction in German and match them up with the distribution of left dislocation with question ellipsis.

(102)   Swamp under embedded coordination
    a. *Die Meldungen, dass wir zwar   wissen,   dass er den Steckbrief   von
       the reports   that we although know.SBJV that the the wanted.poster of
       jemandem hat, aber den Steckbrief von   wem, dass wir das nicht wissen,
       somebody has but the wanted   poster of   who that we that not
       beunruhigen mich.
       know.SBJV   worry me.
    b. *Die Meldungen, dass er den ganzen Tag im   Einkaufszentrum gewesen sei,
       The claims   that he the whole day in.the mall   been   is.SBJV
       um   dort etwas   zu erledigen, aber um   dort was zu erledigen,
       in.order there something to achieve   but in.order there what to achieve
       dass ich das   nicht wisse,   beunruhigen mich.
       that I   dPR.N.SG.ACC not   know.SBJV worry   me.

(103)   Left dislocation with question ellipsis under embedded coordination
    a. *Die Meldungen, dass ich zwar   wisse,   wer den Steckbrief   von Helmut
       the reports   that I   though know.SBJV who the wanted.poster of   Helmut
       Kohl hat, aber den (Steckbrief)   von Angela Merkel, dass ich das
       Kohl has but that wanted.poster of   Angela Merkel that I   dPR.N.SG.ACC
       nicht wisse,   stören mich.
       not   know.SBJV annoy me.
    b. *Die Meldungen, dass ich zwar   wisse,   wer den ganzen Tag im
       the reports   that I   though know.SBJV who the entire   day in.the
       Einkaufszentrum war, um   dort Bücher zu verkaufen, aber um   dort
       mall   was in.order there books to sell   but in.order there
       Tee zu verkaufen, dass ich das   nicht wisse,   stören mich.
       tea to sell   that I   dPR.N.SG.ACC not   know.SBJV annoy me

(104)   Swamp in clausal subjects in the mittelfed
    a. *Wir wissen, dass er ein Bild   von jemandem verbrannt hat. Die weiteren
       we   know   that he a   picture of   somebody burnt   has. The further
       Ermittlung wird, ein Bild   von wem, stark   beeinflussen.
       investigation will   a   picture of   who strongly influence.
    b. *Der Verdächtige war den ganzen Tag im   Einkaufszentrum, um   dort
       the suspect   was the entire day in.the mall   in.order there
       etwas   zu erledigen. Die weiteren Ermittlungen hat um   dort was zu
       something to achieve   the further investigations has in.order there what to
       tun stark   beeinflusst.
       do strongly influenced

(105)   Left dislocation with question ellipsis with clausal subject in the mittelfeld

   a. *Die Ermittlungen hat, wer das Mädchen zuletzt gesehen hat, nicht sehr
      the investigations has who the girld   last   seen   has not very
      beeinflusst, aber ihren Gang   hat, den Jungen, stark   beeinflusst.
      influenced but their progress has the boy   strongly influenced.

   b. *Die Ermittlungen hat, wer im   Einkaufszentrum war, um   einzukaufen
      the investrigations has who in.the mall   was in.order to.shop
      nicht sehr beeinflusst, aber ihren Gang   hat, um   Freunde zu treffen,
      not   very influenced but their progress has in.order friends to meet
      stark   beeinflusst.
      strongly influenced.

(106)   Swamp with extraposed subject clauses

   a. ??Er hat im   Einkaufszentrum ein Bild   von jemandem gekauft. Für mich ist
     he has in.the mall   a   picture of   someone bought for me   is
     es vor   allem überraschend, ein Bild   von wem.
     it before all   surprising   a   picture of   who

   b. *Er war den ganzen Tag im   Einkaufszentrum, um   dort etwas   zu
     he was the entire   day in.the mall   in.order there something to
     erledigen, aber es ist ziemlich überraschend, um   dort was zu erledigen.
     achieve   but it is rather   suprisiing   in.order there what to achieve

(107)   Left dislocation with question ellipsis with extraposed subject clause

   a. *Es war nicht besonders   aufschlussreich, wer im   Einkaufszentrum ein Bild
      it was not   particularly revealing   who in.the mall   a   picture
      von Kohl gekauft hat, aber es war schon interessant, ein Bild   von Merkel.
      of Kohl bought has but it was rather interesting a   picture of   Merkel

   b. *Wer im   Einkaufszentrum war, um   dort Bücher zu kaufen, war nicht
      who in.the mall   was in.order there books to buy   was not
      besonders   aufschlussreich, aber es war schon interessant, um   dort
      particularly revealing   but it was rather interesting in.order there
      Freunde zu treffen.
      friends to meet

(108)   Swamp in unselected embedded question

   a. ?Hans hat im   Einkaufszentrum ein Bild   von jemandem gekauft, aber die
      Hans has in.the mall   a   picture of   someone bought but the
      Kassiererin wollte uns nicht verraten, ein Bild   von wem.
      cashier(F) wanted us not   tell   a   picture of   who

   b. ?*Hans war den ganzen Tag im   Einkaufszentrum, um   dort etwas   zu
      Hans was the entire   day in.the mall   in.order there something to
      erledigen, aber der Wachmann wollte mir nicht verraten, um   dort was zu
      achieve   but the guard.man wanted me not   tell   in.order there what to
      erledigen.
      achieve

(109)   Left dislocation with question ellipsis in unselected embedded question

   a. *Die Kassiererin hat uns zwar   verraten welche Kunden   ein Bild   von Kohl
      the cashier(F) has us though told   which customers a   picture of   Kohl
      gekauft haben, aber sie wollte uns nicht verraten, ein Bild   von Merkel.
      bought have   but she wanted us not   tell   a   picture of   Merkel.

    b. *Der Wachmann hat uns zwar   verraten, wer im   Einkaufszentrum war
       the guard.man has us though told   who in.the mall   was
       um   dort Bücher zu kaufen, aber er wollte uns nicht verraten, um
       in.order there books to buy   but he wanted us not tell   in.order
       dort Freunde zu treffen.
       there friends to meet

The patterns above show that the distribution of the swamp construction and of left dislocation with question ellipsis is very parallel, especially when we look at the more egregious pied-piping violations with *in order to*.

Next we turn to embedding diagnostics. Binding into the elliptical question is possible in the swamp construction and in left dislocation with elliptical questions.

(110)   Binding into question in the swamp construction
    a. Jeder Teilnehmer$_t$ muss ein Bild   von einem Politiker malen, aber ein Bild
       every participant must a   picture of a   politician paint but a   picture
       von welchem Politiker, das   weiss noch   keiner$_t$.
       of   which   politician dPR.N.ACC.SG yet   nobody
       Every participant must paint a picture of a politician but nobody$_t$ knows yet which politician he$_t$ has to paint a picture of.
    b. Jeder Teilnehmer$_t$ muss den ganzen Tag im   Einkaufszentrum verbringen,
       every participant must the entire day in.the mall   spend
       um   dort etwas   bestimmtes zu erledigen, aber um   dort was zu
       in.order there something particular   to achieve   but in.order there what to
       erledigen, das   weiss noch keiner$_t$.
       achieve   dPR.N.ACC.SG knows yet   nobody
       Every participant must spend the entire day at the mall in order to do something there, but no participant$_t$ knows what he$_t$ will have to spend the entire day at the mall in order to achieve.

(111)   Binding into question in left dislocation with question ellipsis
    a. Jeder Zeuge$_k$ erinnert   sich, wann er$_k$ das Mädchen zuletzt gesehen hat, aber
       every witness remembers self when he the girl   last   seen   has but
       den Jungen, daran   erinnert   sich keiner$_k$.
       the boy   there.on remembers self nobody
       Every witness$_k$ remembers when he$_k$ last saw the girl but nobody$_k$ remembers when he$_k$ last saw the boy.
    b. ?Jeder Zeuge$_k$ erinnert   sich, wann er$_k$ im   Einkaufszentrum war, um
       every witness remembers self when he in.the mall   was in.order
       dort Freunde zu treffen, aber um   dort Bücher zu kaufen, daran
       there friends to meet   but in.order there books to buy   there.on
       erinnert   sich keiner$_k$.
       remembers self nobody
       Every witness$_k$ remembers when he$_k$ was at the mall to buy books but nobody$_k$ remembers when he$_k$ was at the mall in order to meet friends.

Concerning the category of the fronted constituent, we saw above (54)–(63) that the swamp construction in German shows clear signs of CP fronting. As a further argument, we can replicate the pattern in (46) in German:

(112)   Der Angeklagte war den ganzen Tag im   Einkaufszentrum, um   dort
         the accused   was the entire   day in.the mall   in.order there
         etwas   zu erledigen.
         something to achieve
    a. Um   dort was   zu tun, fragt sich der Geschworene.
        in.order there what to do   asks self the juror
    b. *Um   dort was   zu tun, findet der Geschworene heraus.
        In.order there what to do   finds the juror   out
    c. Um   dort was   zu tun, fragt der Geschworene.
        In.order there what to do   asks the juror
    d. *Um   dort was   zu tun, stellt   der Geschworene fest.
        In.order there what to do   set.down the juror   fast

Of course, it needs to be shown that *in order to* clauses can be contrastively left dislocated
in German. The following examples show that they can:

(113)   Left dislocation of an *in order to* infinitival clause in declaratives and interrogatives
    a. Um   Bücher zu kaufen, da   musst du ins   Einkaufszentrum gehen.
        in.order books to buy   there must you in.the mall   go
        You must go to the mall in order to buy books.
    b. Um   bis Mitternacht zu Hause zu sein, wann muss ich da   den Bus
        in.order until midnight   to home to be   when must I   there the bus
        nehmen?
        take
        When do I have to take the bus to make it home by midnight?
    c. Um   nach Hause zu kommen, muss ich da   den Bus nehmen?
        in.order to   home to come   must I   there the bus take
        Do I have to take the bus to get home?

Pronouns in the left dislocated infinitival clauses can be bound from the matrix, showing that
we are dealing with contrastive left dislocation rather than with hanging topics:

(114)   Ich weiss wer$_w$ am   Strand war, um   seinen$_w$ Hund auszuführen, aber um
         I   know who at.the beach was in.order his   dog to.walk   but in.order
         seine$_w$ Freundin zu treffen, (wer$_w$ da   am   Strand war,) das   weiss ich
         his   friend(F) to meet   who there at.the beach was dPR.N.SG.ACC know I
         nicht.
         not
         I know who$_w$ was at the beach in order to walk their$_w$ dog, but I don't know who$_w$ was
         at the beach in order to meet their$_w$ girlfriend.

The data reported in this appendix complement those in the main text. Given the data here,
even for speakers who tolerate pied-piping of the brother-of-who type in indirect questions and/or
sluices, the argument that there is a construction that allows exceptional pied-piping and that
it behaves like contrastive left dislocation with question ellipsis stands.

Appendix III: On the fundamental corollary under Abe's in-situ approach to sluicing

This appendix provides a systematic look at the proposal contained in chapter 2 of Abe 2015. The chapter contains Abe's core proposal. The main claim I establish is that Abe's approach does not capture the generalization that only those phrases that can undergo *wh*-movement are possible sluicing remnants. A few comments on chapter 3 about differences between VP ellipsis and sluicing and chapter 4 on the swamp construction will be made where this is pertinent.

I begin these remarks by outlining Abe's proposal again, emphasizing the role of the features driving movement and of those driving pronunciation. I go on to systematically discuss the relation between these two features. The discussion demonstrates that Abe's account of sluicing fails to explain the fact that sluicing remnants are generally *wh*-movable constituents. In other words, I will argue that the following claim (Abe 2015, p. 18) is mistaken: "The present mechanism of movement has one clear advantage [...]: it immediately captures the fact that a possible remnant *wh*-phrase in sluicing corresponds to a possible *wh*-phrase that undergoes *wh*-movement in regular *wh*-questions."

Under Abe's analysis, as we saw, sluices are CPs with a *wh*-phrase in Spec,CP, (115). Movement of *what* is regular *wh*-movement driven by the feature(s) generally responsible for *wh*-movement. The TP sister of C_Q is marked '[Delete]' and will be left unpronounced save for material marked '[Focus]'.

(115)   She's reading something, but I can't imagine what.
          [CP <what>$_{[Focus]}$ [C_Q [TP$_{[Delete]}$ ~~she is reading~~ <what>$_{[PF][Focus]}$]]]

Regarding the *wh*-chain, the low copy is pronounced. This is indicated by the markup '[PF]', indicating that the *wh*-phrase's PF-features are located in this position. It is the low copy of the *wh*-phrase which is endowed with PF-features because both links of the chain are adjacent and a high chain link may be pronounced only when high pronunciation has a PF effect.

(116)   Condition on high pronunciation (Abe 2015, p. 19 #44):
          Given a chain C=$\{\alpha_1,...,\alpha_n\}$, the head of each link (α_i, α_j) cannot be pronounced unless it has an effect on PF output.

Logically, there are six possible geometric relations between the placement of the *wh*-property, henceforth [*wh*], driving movement and the [Focus] markup:

(117)   a.   [*wh*] and [Focus] mark the same XP: [XP$_{[wh][Focus]}$ ...].
          b.   [Focus] marks XP and [*wh*] marks YP, where XP irreflexively dominates YP: [XP$_{[Focus]}$ ...[YP$_{[wh]}$ ...] ...].
          c.   [Focus] marks XP and [*wh*] marks YP, where YP irreflexively dominates XP: [YP$_{[wh]}$ ...[XP$_{[Focus]}$ ...] ...].
          d.   [*wh*] is present in the absence of [Focus].
          e.   [Focus] is present in the absence of [*wh*].
          f.   [Focus] on XP and [*wh*] on YP, where XP neither dominates nor is dominated by YP: [...[XP...]$_{[Focus]}$ ...[YP ...]$_{[wh]}$ ...].

Abe himself offers no systematic discussion of these possibilities and offers no principles restricting the distribution of [*wh*] and [Focus]. The null assumption is therefore that the relative distribution is of [*wh*] and [Focus] is free. I discuss the six logical possibilities in turn.

When [*wh*] and [Focus] mark up the same constituent, this constituent will *wh*-move and be the ellipsis remnant. These are the standard cases of sluicing. The fundamental corollary of *wh*-move-and-delete analyses of sluicing says that this is the only case.

The possibility that the [Focus] markup appears on a phrase properly containing the phrase undergoing *wh*-movement is allowed by Abe's theory. Abe 2015, pp. 18–21 invokes this possibility in his analysis of the swamp construction, which I will not comment on further here, and in his analysis of swiping, (118) (based on Abe 2015, p. 19 #42):

(118)   Lois was talking (to someone), but I don't know who to.
         [$_{CP}$ <who>^{1} C$_Q$ [$_{TP[Delete]}$ Lois was [$_{vP}$ <who>^{2} talking [$_{PP[Focus]}$ <who>$^3_{PF}$ [[$_P$ to]
         <who>^{4}]]]]]

Who moves to Spec,CP but the entire PP is marked as [Focus].[31] Therefore, PP survives ellipsis, a phrase properly containing the moving *wh*-phrase. The PF features of *who* reside in <who> ^{3}, because the initial movement step crosses the preposition and has an effect on PF output while the remaining steps, in the presence of ellipsis, do not. We see then that Abe assumes that the [Focus] markup can reside on phrases properly containing the moving *wh*-phrase. Note furthermore that Abe assumes that [Focus] markup does not necessitate movement of the phrase carrying it: The PP does not move to the left periphery. This conclusion will become important later on.

It should be clear that Abe's treatment of swiping opens the door to other structurally similar patterns such as the following:

(119)   a. *Lois was talking (to someone), but I don't know who talking to.
         b. *Lois said that she talked to someone, but I don't know who that she talked to.
         c. *Fred has a picture of someone, but I don't know a picture who of.
         d. *Fred has a picture of someone, but I don't know who a picture of.

(119a) simply places [Focus] on vP instead of PP in (118). This saves vP from ellipsis and leads to the pronunciation of <who>^{2}. (119b) is a long distance version with CP marked as [Focus] and pronunciation of <who> in the intermediate Spec,CP. (119c–d) are versions of the example with *a picture of who* as the object and pronunciation of *who* either at the edge of PP, (119c), or at the edge of DP, (119d). In other words, wherever there is an intermediate landing site, there ought to be a corresponding swipe. This massive violation of the generalization that only *wh*-movable constituents can be sluicing remnants follows directly from Abe's theory.

While Abe does not discuss possibility (117c), nothing seems to rule out the possibility of the phrase undergoing *wh*-movement properly containing the phrase marked [Focus]. Consider the following examples from German, showing that pied-piping is forced in questions about the degree of an attributive adjective as well as their corresponding sluices:[32]

(120)   Er hat ein großes Auto gekauft, aber ich weiss nicht, …
         he has a   big   car   bought but I   know not
         He has bought a big car, but I don't know…
         a. ein wie großes (Auto) (er _____ gekauft hat).
            a   how big   car   he   bought has
            how big a car (he bought)
         b. *wie großes (er ein _____ Auto gekauft hat).
            how bit   he a   car   bought has
         c. *wie (er ein _____ großes Auto gekauft hat).
            how he a   big   car   bought has

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[31] Abe also, irrelevantly to the point under discussion, marks *who* as [Focus].

[32] For discussion of apparent left branch extraction see Abels 2017b; Barros, Elliott, and Thoms 2014; Elliott 2012; Merchant 2001; Montali 2014. Such examples crucially involve morphologically predicative adjectives in German.

(The example is fine on the manner reading of *wie*–'how', of course.)

It is not clear how Abe would rule out (120b–c). The problematic representations are those where only *wie großes*–'how big' and *wie*–'how' are marked as [Focus] and survive ellipsis, while the entire DP headed by *Auto*–'car' moves to Spec,CP in line with the pied-piping requirements of German.

(121) a. $[_{\text{CP}} <$a [how big]$_{[\text{Focus}]}$ car]$_{[wh]} >^1$ C$_{\text{Q}}$ $[_{\text{TP[Delete]}}$ he $<$[a [how big]$_{[\text{Focus}]}$ car]$_{[wh]} >^2$ bought has]]

b. $[_{\text{CP}} <$a [how]$_{[\text{Focus}]}$ big car]$_{[wh]} >^1$ C$_{\text{Q}}$ $[_{\text{TP[Delete]}}$ he $<$[a [how]$_{[\text{Focus}]}$ big car]$_{[wh]} >^2$ bought has]]

Observe that low pronunciation of the *wh*-chain in (121a) leads to the PF output *wie großes*–'how big' while high pronunciation of the *wh*-chain derives either *ein Auto wie großes*–'a car how big' or *ein wie großes Auto*–'a how big car'. Similarly for (121b). Since high versus low pronunciation makes a clear PF difference, one might be tempted to assume that condition (116) would license high pronunciation of the *wh*-chain, thus correctly ruling out (121a–b). However, the notion of what constitutes a PF effect in the sense of (116) is not an intuitive notion in Abe's theory. It is defined crucially in terms of overt material (or *wh*-traces, see Abe 2015, p. 55 #40) linearly intervening between two copies forming a chain link.[33] Because of TP ellipsis, no overt material intervenes between the high and the low copy of *ein wie großes Auto*–'a how big car'. This forces low pronunciation of the chain and, consequently, leads to the deviant outputs in (120b–c). Again we see that Abe's theory fails to derive the generalization that only *wh*-movable constituents can be sluicing remnants.

We now turn to the question of whether, under Abe's assumptions, there are moving *wh*-phrases that lack the [Focus] markup altogether, (117d). The answer is clearly yes. Abe assumes a very tight syntactic parallelism constraint between antecedent and ellipsis site (this is implicit in the discussion on p. 21 opening chapter 2.3 and on p. 40 above #38 Abe 2015). A simple example of sluicing like (122) will thus have the representation indicated.

(122) Somebody was wondering what Joe had brought, but I can't remember who.
...$[_{\text{CP}} <$who$>^1_{[\text{Focus}]}$ C$_{\text{Q}}$ $[_{\text{TP[Delete]}} <$who$>^2_{[\text{Focus}][\text{PF}]}$ was wondering $<$what$>$ Joe had brought $<$what$>]]$

The important point about the representation is that the *wh*-phrase *what* does not and must not carry the [Focus] markup. If it could (or had to) it would be possible (necessary) to pronounce it, counter to fact. Thus, *wh*-phrases without the [Focus] markup are possible even within the ellipsis site. We saw before that phrases carrying the [Focus] markup may but need not move. (122) shows that moving phrase may be but need not be marked as [Focus]: [Focus] markup is doubly dissociated from movement.

Continuing on to the configuration in (117e), we note that Abe 2015, chapter 3.4 treats fragment answers as the non-*wh*-equivalent of sluicing, assigning the following representation to the relevant examples:

(123) A: Who did she see?

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[33] I should note that defining PF-effect in terms of crossing rather than overall output is not an accidental flaw in Abe's set of definitions but a (necessary) design feature. Abe's analysis of the swamp construction, (17), rests on the assumption that the pronunciation of this structure will be *a picture of who(m) I don't know* rather than *a picture of I don't know who(m)*. This is guaranteed by the idea that high pronunciation of *who* has no effect on PF output, but such a conclusion can only be drawn if PF output effects are calculated in terms of material crossed by individual chain links rather than in a global fashion.

B: John.
$[_{\text{TP[Delete]}}$ She saw John$_{[\text{Focus}]}$]

The ellipsis remnant is marked as [Focus] (in the absence of a *wh*-phrase) and survives ellipsis. The discussion up to this point thus shows that [Focus] is doubly dissociated from the *wh*-property: each can appear freely with or without the other. Note again that Abe assumes (crucially in 2015, p. 22 fn. 15) that the remnant in fragment answers may remain in situ. Abe's analysis of fragments thus confirms again that [Focus] markup is independent of movement.

Given this conclusion, one might wonder what is predicted to happen when an elliptical *wh*-question contains focus markup on a phrase which neither dominates nor is dominated by the moving *wh*-phrase, (117f). It seems that Abe's analysis predicts two different scenarios depending on the exact position of the [Focus] marked phrase. A simple case is the following, which, under Abe's assumptions, allows the full version, (124a), and the elliptical structure, (124b), with the analysis indicated:

(124)   a.   It is clear who saw the girl, but it is not clear who saw the boy.
         b.   *It is clear who saw the girl, but it is not clear the boy.
              $[_{\text{CP}}$ <who>^{1} C$_\text{Q}$ $[_{\overline{\text{TP[Delete]}}}$ <who>$^2_{\overline{\text{[PF]}}}$ ~~saw~~ [the boy]$_{[\text{Focus}]}$]]

The TP is deleted. The *wh*-chain cannot be pronounced high because no pronounced material is crossed. *The boy* is the sole ellipsis remnant. Similarly, the following example has the derivation indicated in Abe's system:

(125)   *It is clear who the girl saw but it is not clear who the boy.
         $[_{\text{CP}}$ <who>$^1_{\text{[PF]}}$ C$_\text{Q}$ $[_{\overline{\text{TP[Delete]}}}$ [the boy]$_{[\text{Focus}]}$ ~~saw <who>^{2}~~   ]]

Here TP is deleted to the exclusion of the focus-marked constituent *the boy*. Crossing of pronounced material leads to high pronunciation of the *wh*-chain, outside of the ellipsis site. We see that under Abe's theory, sluicing remnants can be phrases that have nothing to do with the *wh*-feature or *wh*-movement, showing just how mistaken Abe's assertion that we quoted above is.

Two important conclusions emerge from this discussion. First, Abe's theory does not come close to capturing anything resembling the generalization that only *wh*-movable constituents can be sluicing remnants, leaving Ross' main argument for a *wh*-move-and-delete approach to sluicing unaddressed. Second, the [Focus] mark up that drives pronunciation within the ellipsis site is doubly dissociated both from movement to the left periphery and from the *wh*-feature.

It is necessary to expand the discussion briefly to chapter 4 of Abe's book, because the conclusion that Abe's [Focus] is doubly dissociated from both movement and *wh*-features might seem contentious in light of Abe's discussion in that chapter. Recall that Abe proposes a derivation of the swamp construction in terms of regular *wh*-movement with low pronunciation of the *wh*-phrase coupled with topicalization of the larger containing phrase (see structure (17)). Abe proposes that both *wh*-movement and topicalization fall within the same movement type (see footnote 7 for discussion). This movement is driven by a feature named [Focus].[34] Abe remarks (2015, p. 52–3 fn. 3) that this choice of name for the feature is ultimately arbitrary, noting that it could have been named [A'] or [Operator] instead. While this is true, calling the feature driving movement to the left periphery [Focus] is extremely unfortunate in the context of a system where there already is a feature called [Focus], the feature allowing phrases to survive ellipsis. This feature, [Focus]$_{\text{ch. 2}}$, as we saw has totally different properties from those now ascribed to

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[34] "Both a *wh*-phrase and a topicalized phrase carry [Focus] features and the former is licensed in Spec-CP, whereas the latter is licensed in the Spec of a functional category (call it Topic) higher than CP.[footnote omitted]" Abe 2015, p. 52 #33.

[Focus]$_{\text{ch. 4}}$. Indeed, their properties are mutually incompatible. [Focus]$_{\text{ch. 4}}$ is a feature driving movement to the left periphery; it is inherently present on *wh*-phrases and fronted topics. As we saw, [Focus]$_{\text{ch. 2}}$ is doubly dissociated from movement and doubly dissociated from *wh*-features. Abe makes no attempt to distinguish [Focus]$_{\text{ch. 2}}$ from [Focus]$_{\text{ch. 4}}$ terminologically and seems to be oblivious to the fact that their content is as different as can be. As far as I can tell, introducing a new [Focus] feature in chapter 4 is terminologically very confusing but does not threaten the conclusion from the above discussion in any way.

I will conclude by highlighting an interesting question raised by Abe concerning the island sensitivity of the swamp construction. Abe provides the following examples to show that the swamp construction shows island sensitivity (judgments as reported by Abe):

(126)   a. ?John denied that he took a picture of somebody, but a picture of whom I don't know. Abe 2015, p. 48 ex. 10
        b. ?*John met a person who took a picture of somebody, but a picture of whom I don't know. Abe 2015, p. 48 ex. 11a
        c. ?*John got mad because Mary took a picture of somebody, but a picture of whom I don't know. Abe 2015, p. 48 ex. 12a
        d. A: John met a person who took a picture of somebody.
             B: Oh, (?*a picture of) who? Abe 2015, p. 50 ex. 23
        e. A: We all complained about the person who spent the entire day doing something at the mall.
             B: Oh, (?*doing) what? Abe 2015, p. 50 ex. 24

Abe further gives the following examples intended to show that topicalization of the remnant rather than topicalization of the sluice is at play even when there is no exceptional massive pied-piping (judgments as reported by Abe):

(127)   a. ?*John met a person who took a picture of somebody, but who I don't know. Abe 2015, p. 49 ex. 17a
        b. ?*John got mad because Mary took a picture of somebody, but who I don't know. Abe 2015, p. 49 ex. 17b

I have not been able to replicate the judgments reported in (126) and (127) with my own informants, who find characteristic island amelioration effects in both. The data are thus somewhat uncertain. I should also note that it is unclear to me how Abe's theory accounts for the judgments he reports for (127). As far as I can tell, nothing in his account rules out a derivation of (127) with a sluice (CP) undergoing topicalization and with island repair within the sluice. In other words, it seems to me that Abe's theory predicts (127) to be ambiguous between a structure where the remnant topicalizes and one where the sluice topicalizes (while (126) unambiguously involves the former). The examples in (127) are therefore expected to show the island insensitivity characteristic of sluicing. In other words, the judgments reported by Abe are subject to unexplained variation and fail to support his theory.

Overall, we have seen that Abe's in-situ approach to sluicing fails to capture the generalization that only *wh*-movable categories can be sluicing remnants. The in-situ approach thus fails to pose a serious challenge to *wh*-move-and-delete accounts.