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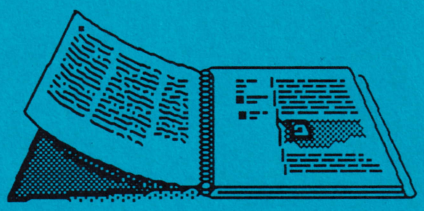

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Specificational Pseudoclefts and the Semantics of Lists[1]

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In this paper we propose a novel account of specificational -nonpredicational- copular sentences building on quite old insights found in Higgins (1979). We draw a distinction between equational and truly specificational sentences. Empirical motivation for this distinction will be provided by a detailed examination of specificational pseudocleft sentences in Greek, where two types of pseudoclefts can be identified: one introduced by a demonstrative and one introduced by a free relative pronoun. We show that these two types instantiate the distinction between equation and specification, respectively.

This paper is organized as follows. In section 1 we provide the background ideas and terminology which have come to be considered as standard in the studies of pseudoclefts since Higgins. In section 2 we concentrate on Greek pseudocleft sentences. We start out with some basic data and discuss Iatridou and Varlokosta's 1997 analysis of them in 2.1. We then highlight the problems encountered by this analysis, and elaborate briefly on the most serious ones; facts from Spanish and Catalan will also be discussed in this connection. By the end of section 2, the set of data and puzzles to be dealt with in this paper will have been established, and in section 3 we put forth the core elements of the theory we propose to account for them. We apply this theory to the data in section 4, showing that it can indeed handle them successfully. We conclude with some discussion of the crosslinguistic consequences of the proposed analysis.

1 Background: Higgins 1979

In the literature, the term 'pseudocleft' is invoked for copular sentences of the form in (1), where one of the phrases surrounding the copula is wh-, more specifically a free relative, and the other is not:

(1) What John is is silly.

Adopting the terminology of Merchant 1997, we will refer to the non-wh-part as the *pivot* of the pseudocleft, and to the wh-part as the *nonpivot* of it. We will see later on that nonpivots do not always contain a wh-phrase. Higgins 1979 (also appeared as Higgins 1973, 1976) is the most comprehensive study of the syntax and semantics of such sentences to date, and his analysis has been extremely influential (but see also Akmajian 1970, and Halvorsen 1976). Although it is designed to account for the English pseudocleft construction, the repercussions of Higgins's approach have been visible in the analysis of pseudoclefts crosslinguistically. We summarize below the most important points.

[1] This paper was presented at the Workshop on Clefts and (Pseudo)clefts, ZAS, Berlin, November 1997. We thank the audience for their generous feedback. We are especially indebted to Caroline Heycock, Roumyana Izvorski, and Ilze Zimmerman for discussion; to Josep Quer for providing the Spanish and Catalan data; and to Jason Merchant for detailed comments and suggestions on a previous draft.

(a) *Distinction between predicational and specificatinal pseudoclefts*

Following Akmajian 1970, Higgins distinguishes two readings in pseudocleft sentences: the *predicational*, and the *specificational*, illustrated for sentence (1) (Higgins 1979: 4) in (2a) and (2b):

(2) a. John is P. Being P is silly. or, P-hood is silly. (predicational)
b. John is the following: silly. (specificational)

Under the predicational reading, sentence (1) has a standard subject-predicate structure, but one of second order: Q(P). Q is the predicate provided by the postcopular material, a property of properties, and the property P expressed by the pseudocleft is the subject, the property predicated of by Q. Under the specificational reading, on the other hand, (1) does not have a subject predicate structure. Rather, it 'functions as a list, in which the subject is the heading of the list and the predicate complement is an item on the list' (Higgins 1979: 5). Higgins envisioned lists as open sets of individuals or properties, so sentence (2a) above would be roughly represented as {P| P is a property that John has} = {silly,...} (although we must note that Higgins does not offer a precise formulation of the notion of list, or the link between the heading of a list and its and extension) .

The semantic structure of a pseudocleft sentence under the specificational reading seems comparable to that of identity statements like the ones in (3), where identity is thought of in terms of equation '=':

(3) a. The Morning Star is the Evening Star.
b. Morning Star = Evening Star

This apparent similarity between specificational pseudocleft sentences and identity statements about atomic individuals made it theoretically attractive to collapse the two, thus moving away from Higgins's view of specificational pseudoclefts being lists, i.e. sets (cf. Veloudis 1979a,b, Rapoport 1987, Heycock & Kroch 1996). In this paper, we present empirical motivation for the need to maintain both assumptions for a comprehensive analysis of pseudeocleft sentences.

(b) *Various types of copular sentences*

According to Higgins, copular sentences are not uniform, a claim already detectable in the ambiguity he poses between the predicational and specificational readings mentioned above. Four types of copular sentences are distinguished, given in Table (1) (Higgins 1979:166):

Table 1

Type	*Subject*	*Predicate*
Identificational	Referential	Identificational
Identity	Referential	Referential
Predicational	Referential	Predicational
Specificational	Superscriptional	Specificational

The sentences below instantiate each type:

(4) That man over there is John Smith. (identificational)
(5) The Morning Star is the Evening Star. (identity)
(6) Paul is sick. (predicational)
(7) What I don't like like about John is his tie. (specificational)

Identificational and identity sentences express an equation relation between two referential noun phrases (NPs). Sentence (5) states that the object picked by 'that man over there' and by the name 'John Smith' is one and the same. Likewise, sentence (6) states that the referents of 'Morning Star' and 'Evening Star' are one and the same object. Obviously, then, identity and identificational sentences express the same semantic relation, namely identity of reference. It seems therefore reasonable to treat them as one class, as speculated by Higgins himself (see also Rapoport 1987). Here, we will treat them on a par, as equations between objects of various types (see dicsussion in sections 3,4). [2]

Predicative sentences are of the standard form P(x) familiar from predicate logic, and thus distinct from equative sentences. Interestingly, specificational sentences like (1) and (8) above are also treated as distinct from equatives in Higgins's typology. What makes them different is the assumption that the specificational subject is different from the subject in equatives. The former denotes a list, i.e. a set, (it is *superscriptional*), but the latter denotes an individual since it is referential. In what follows we take this distinction very seriously.

With his typology, Higgins partitions the space of copular sentences into a predicational and a nonpredicational domain. This partitioning correlates with proposals regarding the nature of the copula *be,* like Halliday 1967 where an ambiguity is introduced between equative and predicative *be.* Partee 1985, following Williams 1983, attempts to assign a unified analysis to both *be*s (see also Rapoport 1987 for syntactic arguments), proposing at the same time a type-shifting mechanism to derive predicative and equative readings. We will not go into the debate here, though it will become obvious that for the semantic analysis we propose in this paper the simplest hypothesis of an unambiguous *be* (with the associated shifting mechanisms) is adequate.

With this background, we turn now to the examination of the Greek data. We will ignore predicational pseudocleft sentences, and focus on the nonpredicational domain identified by Higgins. We will use the term 'specificational sentences' to refer to this domain, yet this should not be taken to indicate a unification of the two subtypes (equatives and specificational).

2 Specificational pseudoclefts in Greek (first encounter)

Pseudoclefts in Greek are discussed in Veloudis 1979 and more recently in Iatridou & Varlokosta 1997 (henceforth I&V). Each analysis discusses totally different sets of data, thus reaching strikingly different conclusions. Veloudis 1979 focuses on specificational pseudoclefts of the form *Aftos pu filise i jineka sou itane o Petros* 'The one your wife kissed was Peter', and he treats them as equatives. I&V 1997, on the other hand, cast their analysis in terms of inverse predication, in the sense Williams 1983 (see also Heggie 1988, Moro 1992), and in this context they claim that Greek lacks specificational pseudoclefts altogether.

The goal of this section is to show that, contrary to I&V'a claim, there is overwhelming evidence that Greek *has* specificational pseudoclefts. We start out with the crucial ungrammatical data and I&V's analysis of these. We then present a representative

[2] There is huge philosophical literature on identity which we take here for granted. Kripke 1972 offers a representative discussion of the relevant issues which goes back to Leibniz.

sample of Veloudis's grammatical data and a new set of data, which do not follow from I&V's approach. A subset of these involves grammatical specificational sentences minimally similar to the ungrammatical ones of I&V, but with material added to the nonpivot. We show that the ameliorating effect of 'addition' carries over to Spanish and Catalan, languages which according to I&V also lack specificiational pseudoclefts. The situation arising in view of these new facts requires a serious reconsideration of I&V's account. This is needed not only in order to handle the new data but also because other related problems can be shown to emerge regarding I&V's assumptions about inverse predication and their analysis of free relatives as universal quantifiers.

2.1 Pseudoclefts in Greek and crosslinguistically: Iatridou and Varlokosta 1997

Unlike English, Greek exhibits two types of pseudoclefts, one involving a free relative (FR), and one not. The nonpivot of the familiar English-type pseudocleft is introduced by the FR pronoun *oti* 'what(ever)'. We gloss *oti* as 'what(ever)' rather than 'what', because there are serious differences between *oti* and *what (*to be discussed in this paper), which make clear that the two items are not equivalent. We will refer to *oti-* pseudoclefts as *free relative pseudocleft*s(FRP).

Alternatively, the nonpivot of a pseudocleft may be introduced by the demonstative pronoun *afto* 'this.neut.sing' followed by the complementizer *pu* 'that'. Masculine, feminine, and plural forms of *afto* may also be used, but since *afto pu* nonpivots are more common, we use *afto pu* as a cover term. We will refer to this type of pseudocleft as a *demonstrative pseudocleft* (DemP). I&V argue that the specificational reading is unavailable in either case, and they use examples like (9) with plain copular nonpivots as evidence for this claim:

(9) a. *Afto pu ine o Pavlos ine vlakas.
this that is the Paul is stupid
"What Paul is is stupid."

b. * Oti ine o Pavlos ine vlakas.
what(ever) is the Paul is stupid
"*Whatever Paul is is stupid."

Note that specificational readings in such cases are unavailable with *ever*-FRs in English, as evidenced by the ungrammaticality of the English translation in (9b) (an issue to which we return in section 4).[3] I&V argue for an equivalence between FRPs in Greek and *ever*-FR

[3] In support of their argument, I&V note the absence of connectivity effects in Greek pseudoclefts. Since Higgins, who showed that connectivity effects do not arise with predicational pseudoclefts, such effects involving anaphor binding (in (i)) and NPI-licensing (in (ii)) have been used as diagnostics of the specificational nature of a pseudocleft:

(i) What John is is proud of himself.

(ii) ?What John forgot to buy was any books.

I&V present one example involving ungrammaticality of an anaphor. In (iii), however, we show that NPI licensing is bad:

(iii) * Afto pu/oti ksexase n'agorasi o Petros itane kanena vivlio.
What Peter forgot to buy was any books.

Veloudis 1979a, who presents numerous specificational pseudocleft sentences in Greek, gives sentences like (iv) where anaphors are fine, and in (v) we see that principle C effects are also visible:

(iv) Afto/ Aftos pu ida ston kathrefti dhen itan o eaftos mou. (Veloudis 1979a: 38)
What/ the one that I saw on the mirror was not myself.

(v) *Afto pu ipe pro_i itan oti o $Dimitris_i$ itan arostos.

pseudoclefts in English, in that they both denote universal quantifiers. This presupposes an ambiguity between *ever* and plain FRs in English which we do not adopt (see discussion in section 3) . The relation between the English *what*-paradigm and Greek DemPs is not addressed in I&V, the implicit assumption, however, is that the two are equivalent, and that the existing differences (also vis-a-vis the grammaticality of specificational pseudoclefts) relate to the demonstrative element present in DemPs.

I&V confine their discussion to data of the particular type in (9); based on these, they conclude that Greek lacks specificational pseudoclefts altogether. They note that CP-pceudoclefts of the form in (10) (I&V 1997: 18) are indeed available, but they cast doubt on Higgins's characterization of these as specificational:

(10) Afto pu ipe o Kostas ine oti i ji ine epipedi.
this that said the K. is that the earth is flat
"What Kostas said is that the earth is flat."

According to I&V, (10) is a predicational sentence, a claim not entirely justified by the arguments they give (see I&V for details). Here, we align with Higgins's judgment and treat cases like (10) as genuine specificational sentences. We will give more examples of similar sentences below, but before doing so, let us see how (9) is excluded in I&V's account.

Three basic assumptions are made. First, I&V assume that *ever*-FRs denote universal quantifiers. Second, they follow Williams 1983 in assuming that specificational sentences contain inverse predication: unlike regular predication structures, the precopular material- the nonpivot- is the predicate, and the postcopular material- the pivot- is the subject. The third assumption is that demonstratives can never be used predicatively. These assumptions exclude (9) as follows. FRP's are ruled out because they are universal quantifiers, and thus cannot type-shift to a predicative interpretation, as is required by the inverse predication assumption. DemPs are ruled out on the same grounds: a demonstrative can never be used predicatively.[4] Languages that resemble Greek in employing demonstrative-like elements in pseudoclefts are expected to give rise to same kind of ungrammaticality, for exactly the same reason. Although I&V do not provide the relevant data, this prediction appears, at first glance, to be borne out in Spanish and Catalan (Josep Quer (p.c)):[5]

(11) ??El que és en Joan és idiota. (Catalan)
the that is the John is stupid

---

* What he$_i$ was that Dimitris$_i$ was sick.

Similar data hold in Spanish and Catalan, as pointed out to us by Josep Quer (p.c.). It appears, then, that connectivity tests give mixed results in languages like Greek, Catalan, and Spanish. This could also be taken to hold for English, given that certain effects, for instance Principle C effects, are stronger than others, e.g. NPI-licensing (which doesn't really give impeccable sentences, Jason Merchant (p.c.)). We will not discuss connectivity in this paper. The picture that arises, though, suggests that connectivity alone cannot be taken as a defining feature of what constitutes a specificational pseudocleft; its exclusive use to trace specificational readings may lead to the wrong conclusions.

[4] I&V do not state clearly what makes *what-* free relatives legitimate specificational objects. Presumably, *what-*free relatives are not universal quantifiers like the *ever*-ones, and hence amenable to predicative interpretations.

[5] Note, however, that the Catalan and Spanish sentences improve considerably in the S(ubject)-V(erb) order. Compare (11) nad (12) to (i) and (ii) , respectively:

(i) ?El que en Joan és és idiota.

(ii) ?Lo que Juan es es idiota.

This improvement, which is not observed in Greek., seriously undermines the crosslinguistic extension of I&V's account, but we will not pursue the issue here.

(12) ??Lo que es Juan es idiota. (Spanish)
the that is John is idiot
"What John is is an idiot."

Although the ungrammaticality in these languages is not as sharp as it is in Greek (?? versus *), it is present. As we see in the glosses, pseudoclefts in Catalan and Spanish are introduced by the definite determiner and perhaps the slight difference between these languages and Greek should be attributed to this fact.

I&V's account thus postulates a parametrization of the availabiity of pseudoclefts across languages which depends on the choice of morphology (and the semantic constraints associated with that morphology). We record this as the generalization in (13):

(13) *Iatridou & Varlokosta's generalization*
Crosslinguistically, the availability of specificational readings in pseudoclefts relies on whether the nonpivot XP of the pseudocleft can be intepreted as a predicate.

DemPs and FRPs are ruled out by (13) because they cannot obtain predicative interpretations, the former being demonstratives, the latter being universal quantifiers. Although the particular kind of data discussed by I&V conform to (13), once we move to a larger set of data it becomes impossible to maintain the original hypothesis. We see why in the next section.

2.2 Problems of Iatridou & Varlokosta 1997

The main problems arising with I&V's general account, and their generalization in (13), can be summarized as follows.

(a) Specificational sentences (Higgins's identity/indentificational and specificational) are generally available in Greek (as well as in the other languages mentioned above). Veloudis 1979a,b presents an impressive number of data supporting this conclusion.

(b) The ungrammatical copular specificational pseudoclefts in (9a) become grammatical if material is added to the pseudocleft. The effect is very robust and is observed in Spanish and Catalan too.

(c) The view of free relatives adopted in I&V is quite controversial. First it is questionable whether *ever-* and regular *wh*-FRs, in Greek as well as in English, are semantically distinct in the sense assumed by I&V. In fact there are good reasons to believe that they are not (cf Jacobson 1995, Rullman 1995, Grosu & Landman 1997, and Dayal 1995, 1997, among others), and some discussion in section 2.2.3). Second, it is quite disputable whether *ever-* and consequently *oti*-FRs, under the equivalence assumption of I&V, denote universal quantifiers. In fact, the properties of *ever/oti*-FRs used as arguments for the universal quantifier analysis can be shown to derive directly from the assumption that these denote maximal individuals, just like definite NPs (cf. Jacobson 1995, Rullman 1995, Dayal 1997), with some additional postulate concerning the contribution of the free choice morpheme *-ever* (see especially Dayal 1997).

(d) It is not desirable to invoke inverse predication in specificational sentences (for empirical arguments against it see Rapoport 1987 and Heycock & Kroch 1996). The obvious conceptual problem with imposing inverse predication in sentences like *Tully is Cicero*, and *The Morning Star is the Evening Star* is that no predication relation can be claimed to exist between two referring terms (without resorting to stipulations ignoring intuition).

(e) There are significant differences between DemPs and FRPs which are largely ignored in I&V's account, but which will be shown to have important consequences as to how the specificational domain is partitioned.

Points (c) and (d) have been thoroughly discussed in the literature, so we will not eloborate here. Because the rest concerns the specifics of I&V's analysis of Greek pseudoclefts, it will be helpful to go into the details. We will also point out some problems of the analysis of Greek FRs as universal quantifiers.

2.2.1 The general availability of specificational pseudocleft sentences

Greek allows for specificational sentences with both DemPs and FRPs. This is illustrated in great detail in Veloudis 1979a,b for DemPs. The majority of his examples involve sentences like the following, with masculine and feminine demonstratives, but pseudoclefts with neuter demonstratives are also given, especially in connection to anaphors (cf. fn2):

(14) Aftos pu filise ti jineka su itan o Petros. (Veloudis 1979b: 13)
this.masc that kissed the wife yours was the Peter
"The one who kissed your wife is Peter."

(15) Afti pu me eknevrizi ine i mitera tis.
this.fem that me irritates is the mother hers
"The one who irritates me is her mother."

We believe that there are animacy constraints determining the choice of nonneuter gender for the FR pronoun, but this is immaterial to us here. It is important to emphasize, however, that neuter and nonneuter DemPs are not semantically identical: the latter force equative readings, but the former do not (a point to which we return in section 4). The nonneuter DemP data Veloudis focuses on lead him to the conclusion that pseudocleft sentences like the above express equations.

Below we provide below more data involving neuter DemPs and FRPs (not discussed by Veloudis):

(16) Afto pu efaje o Petros itane patates.
this that ate the Peter was potatoes
"What Peter ate was potatoes."

(17) Afto pu agorase o Petros itan afto to palio leksiko.
this that bought the Peter was tthis the old dictionary
"What Peter bought was this old dictionary."

(18) Afto pu aresi stin Elena ine afto pu sixenete o Petros, (diladi to majirema).
this that likes in-the Elena is this that detests the Peter, (namely the cooking)
"What Elena likes is what Peter hates, namely cooking."

(19) Oti efaje o Petros oli mera itane patates.
what(ever) ate.3sg the Peter was.3sg potatoes
"What Peter ate all day was potatoes."

(20) Oti aresi stin Elena ine oti sixenete o Petros, (diladi to majirema).
what(ever) likes in-the Elena is oti detests the Peter, (namely the cooking)
"What Elena likes is what Peter hates, namely cooking."

In general, the use of FRPs is more restricted in specificational sentences than the use of DemPs. One difference regarding addition of material to the nonpivot will be discussed in 2.2 below, and should be connected to another substantial difference: although the pivot of a DemP may contain various types of XPs, the pivot of an FRP is more selective. We saw in examples (19) and (20) that pivots containing mass nouns (*patates* 'potatoes' in (19) or FRs in (20) are fine. Yet pivots containing a referential NP denoting an <e>- type entity, as in (21), are unacceptable (compare also (21) to (17)):

(21) *Oti agorase o Janis itan afto to palio leksiko.
what(ever) bought John was this the old dictionary
("*Whatever John bought was this old dictionary.")

This difference is important, because it shows that DemPs and FRPs are subject to distinct semantic constraints. We will deal with this in section 4. For the moment it is sufficient to point out that sentences like the ones discussed in this subsection are impeccable in Greek, athough under I&V's account they should not be available.

2.2.2. The 'Addition-Effect'
We share I&V's judgment about the ungrammaticality of (9), repeated here as (22) for convenience:

(22) a. *Afto pu ine o Pavlos ine vlakas.
this that is the Paul is stupid
"What Paul is is stupid. "
b. * Oti ine o Pavlos ine vlakas.
what(ever) is the Paul is stupid
"*Whatever Paul is is stupid."

Note, however, that the following sentences, minimally similar to (22), *are* grammatical:

(23) Afto pu dhen ine o Janis ine vlakas.
this that not is the John is stupid
"What John isn't is stupid. "
(24) Afto pou episis ine o Janis ine tsigounis.
this that also is the John is miser
"The other thing John is is a miser. "
(25) Afto pou prepi na ine o Janis (ja na pari ti doulia) ine dinamikos. "
this that must subjunctive is the John (so subjunctive take the job) is dynamic
"What John must be (in order to get the job) is dynamic."

These sentences contrast with the ungrammatical plain copular in (22) in one important way: material has been added to the copular nonpivot; negation *dhen* 'not' in (23),[6] *episis* "also" in

[6]Note that I&V very briefly discuss a similar example (1997: ft. 30):
(i) Afto pu den m'aresi ston Kosta ine to chiumor tu.
this that neg me pleases to Kostas i the humor his
What I don't like about Kostas is his humor.
They conclude that Greek might indeed have the pseudoclefts in which the free relative behaves like a supercriptional NP, in Higgins's terms, but lacks those where the free relative behaves as a predicate. However, they do not pursue this distinction any further.

(24), and the (deontic) modal *prepi* "must" in (25). Note that 'addition' improves only DemPs. As we see below, FRP*s* in Greek as well as in *ever*-FRs in English remain ungrammatical:

(26) *Oti dhen ine o Janis ine vlakas.
what(ever) not is the John is stupid
"*Whatever John isn't is stupid."

(27) *Oti episis ine o Janis ine tsigounis.
what(ever) also is the John is miser
"*Whatever else John is is a miser."

(28) *Oti prepi na ine o Janis ine dinamikos.
what(ever) must subjunctive is the John is energetic
"*Whatever John must be is energetic."

The effect of addition as well as this contrast are dealt with in section 4. For now it suffices to point out that addition improves copular DemPs also in Spanish and Catalan (data courtesy of Josep Quer).

(29) a. El que en Joan no és és idiota. Catalan
the that the John not is is stupid

b. Lo que Juan no es es idiota. Spanish
the that not is the John is stupid
"What John isn't is stupid."

c. El que tambe és en Joan és garrepa. Catalan
the that also is the John is miser

d. Lo que tambien es Juan es agarrado. Spanish
the that also is the John is miser
"The other thing John is is a miser."

(30) a. El que en Joan ha de ser és decidit. Catalan
the that the John must subjunctive is is decisive

b. Lo que Juan tiene que ser es decidido. Spanish
the that must subjunctive is the John is decisive
"What John must be is decisive."

These facts are extremely problematic under I&V's analysis and it is not at all obvious what would account for them in their terms. A possible hypothesis would be to say that the demonstrative admits a predicative use in the examples above. It would be hard to maintain this in their framework, however, given that it is the core assumption that demonstratives can never be predicational that rules out sentences like (22a) in the first place.

In fact, contrary to I&V's (1997: 15, fn. 21) claim, it can be shown that demonstratives do admit predicational uses:

(31) A: OJanis ine poli ergatikos.
John is very hard-working
"John is very hard-working."
B: Ne, afto (akrivos) ine (ke kamia fora su ti spai, jati olo ti doulia skeftete).
yes this (exactly) is
"Yes, that he is (which is sometimes very frustrating, because he always thinks of work)."

Similar uses of demonstratives abound, the claim therefore that demonstratives cannot be predicative is not correct, and I&V's generalization in (13) based on it should be seriously reconsidered.

2.2.3 Free relatives in Greek

We will not go here into a general discussion of the semantics of FRs since the debate is well known. On the one hand, there are theories which treat FRs unambiguously as definites (cf. Jacobson 1995, Rullman 1995, Dayal 1997 among others); on the other, there are authors who argue for what we call the *ambiguity hypothesis* (cf. Larson 1987, Treddinick 1993, I&V 1997 among others). According to this hypothesis, plain- and *ever*-FRs are semantically distinct in that the former are equivalent to definite NPs, while the latter denote universal quantifiers.[7] Here we will align with Jacobson and Dayal and analyze all FRs in Greek as definite NPs. We will show first that there is no ambiguity in the class of Greek FRs, and then we provide arguments against the analysis of these as universal quantifiers.[8]

(a) Greek FRs are not ambiguous.
Like English, Greek exhibits plain and *ever*-FRs. The Greek counterpart of *ever* is the bound morpheme *-dhipote.* As we see in the examples below, both paradigms obtain definite as well as universal readings, just like their English counterparts:

(32) a. Parigila oti parigile o Janis. (= the thing that John ordered)
ordered what ordered John
'I ordered what John ordered'.

b. Kane oti su pi i mitera su. (= everything that your mother tells you)
do what you tell the mother your
'Do what your mother tells you'

(33) a. Opjadhipote tenia pezi tora to Asti ine poli vareti.
whatever movie plays now the A. is very boring
Whatever movie Asti is playing right now is very boring.
(= the movie that Asti is playing now)

b. Opjadhipote tenia pezi to Asti ine poli vareti.
whatever movie plays now the A. is very boring
Whatever movie Asti plays is very boring.
(= every movie that Asti plays)

Perhaps the universal readings are more readily available with *dhipote/ever*-FRs, but this should be attributed to the fact that they can be free choice, due to the presence of *dhipote (*as argued in Giannakidou 1997a,b), but we will not go into this here. Most significantly, the availability of definite readings with *oti*-FRs, as in (32a), questions I&V's generalization that *oti* is a universal. Moreover, the fact that definite and universal readings arise with both types of FRs suggests that these are semantically uniform, contrary to what is assumed in the ambiguity hypothesis.

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[7] Actually it is only Larson (1987) who argues that plain FRs are equivalent to definite NPs. Treddinick (1995) states that plain FRs are compatible with both existential and quantificational interpretations without further characterizing them, whereas I&V (1997) do not take a position (see also footnote 3).

[8] Some speculative discussion in this direction is also given in Alexiadou & Varlokosta (1996).

(b) FRs in Greek are not universal quantifiers

Here we will go through two widely circulated arguments, some of them also discussed in I&V, in favor of the universal analysis of FRs. We show that these arguments in fact can be understood as supporting the definite analysis.

Argument (1): FRs license negative polarity items (NPIs). This has been shown in Alexiadou & Varlokosta (1996) and Giannakidou (1997a):

(34) Thavune opjus pune kamja kali kuvenda ja to Jani.
bury whoever say any good word about John
'They badmouth whoever says a good word about John."

However, definites also license polarity items (a fact illustrated in Giannakidou (1997a), cf. also May 1985 for this observation about English):

(35) I fitites pu ehun tipota na pu as milisun. (Giannakidou 1997a: 43)
the students that have anything to say let them speak
"The students who have anything to say should speak now. "

Hence, NPI licensing per se is not indicative of the universal nature of FRs.

Argument (2): *Almost/absolutely* modification. Jacobson (1995) shows that adverbs like *almost, absolutely,* and *nearly,* which are standardly taken to modify universal quantifiers (cf. Dahl 1970, Carlson 1981 among others) fail to modify FRs.

(36) a. For years I did almost everything you told me to.
b. *For years I did almost whatever you told me to.

Jacobson takes this as an argument in favor of her non-universal analysis of Frs. I&V, in support of the universal analysis, point out that there universal quantifiers which are not modifiable by *almost.*

(37) *For years I did almost each thing you told me to.

Note, however, that definites, contrary to universal quantifiers, are also resistant to *almost/absolutely* modification, as shown in (38).

(38) a. *Idha shedhon ta pedia.
saw almost the children
"*I saw almost the children."
b. Idha shedhon kathe pedi.
saw almost every child
"I saw almost every child."

This fact in conjunction with Vendler's (1967) view of *each* being semantically close to a definite NP, suggest that the impossibility of *almost/absolutely* modification in Frs and *each* NPs is indicative of their definite nature, rather than anything else.

I&V use other arguments concerning quantificational variability effects in FRs observed in Tredinnick (1993), which we will not discuss here (but see Dayal 1997 for a discussion of quantificational variability as applying to definites as well). Dayal also presents a very convincing argument in favor of the definite analysis of FRs based on a contrast noted in Grosu & Landman (1997). We reproduce the argument here for Greek.

Universals contrast with (plural) definites and FRs in partitive constructions. Although the former only exhibit a *distributive* partitive reading, definites and FRs are ambiguous between a distributive and *collective* partitive reading. The contrast is illustated in the sentences below:

(39) a. I Maria diavase ta dio trita apo kathe vivlio s'afti ti sira.
the Mary read the two thirds from every book in this the series
"Mary read two thirds of every book in this series."

b. I Maria diavase ta dio trita apo ta vivlia s'afti ti sira
the Mary read the two thirds from the books in this the series
"Mary read two thirds of the books in this series."

c. I Maria diavase ta dio trita apo opjo/opiodhipote vivlio perilamvanete s'afti ti sira.
the M. read the two thirds from what/whatever book included in this the series
"Mary read two thirds of whatever books are in this series."

(39a) says that for each book in the series Mary read two thirds of it. This is the distributive partitive reading. In this reading, there are no books that were not at least partly read by Mary.The distributive partitive reading is also available in (39b) and (39c). These sentences, however, have an additional collective reading. Under this reading, there are some books in the series that were not read at all. Mary might have read the two thirds of the sum of the books included in the series. The first reading is a truly quantificational one (possibly derived via a QR-like mechanism, which would make the universal scope out of the partitive as in Dayal 1997), but the second reading is in situ reading. The two readings are illustrated in (40) and (41) for (39a) and (39b) respectively:

(40) a. $[_{IP}$ Mary $[_{VP}$ every book in this series$_i$ $[_{VP}$ read $[_{NP}$ two thirds of $t_i]]]]$

b. $\forall x$ [book (x) & in this series (x) $\rightarrow$ read (Mary, $2/3 \leq x$)]

(41) a. $[_{IP}$ Mary $[_{VP}$ read $[_{NP}$ two thirds of the books in this series]]]

b. read (Mary, $2/3 \leq \iota x$ [*books (x) & in the series (x)])

The fact that FR in (39c) can obtain either reading in either version (plain and free choice) allows us to conlude that it behaves like a plural definite. As such, it denotes maximal non-atomic sums translated by the ι-operator. This is the view we adopt in this paper. For free choice readings we assume a plural definite analysis together with some constraint relating to the nature of free choice (cf. Dayal 1997, Giannakidou 1997b for more discussion).

Summarizing, the discussion in section 2 leads to two obvious conclusions. The first is that Greek *has* specificational pseudoclefts. The second conclusion is that FRPs and DemPs are semantically different. A comprehensive analysis of specificational pseudoclefts should be able to account for this difference in a simple and natural way.

3 The Proposal: Equation vs. Specification

We propose that SPPs come in two varieties: either as equative, or as truly specificational. As we see in (42), equation and specification both involve some instance of identity. In equation, we have identity between *objects* (which must be of the same type, equation is thus subject to matching constraints, see also Heycock & Kroch 1996). Specification, on the other hand, involves set-theoretic identity: α and β are coextensive sets.

(42) (a) *Equation*
α = β, where α and β range over elements of the same type.
Possible types are: e, <e, t>, and functional types.
(b) *Specification*
α = β, where α and β are coextensive sets, α specified by predicate notation {x| P(x)}, and β by list notation {a,b,c}.

Formalizing specification as in (42b) is consistent with Higgins's view of SPPs as conveying an identification relation between the heading of a list and its contents. Specified sets may consisting of individuals, or properties.

The distinction between equation and specification we propose here should not be translated into an ambiguity of the copula *be*. We take it that *be* of specification is identical to equative *be,* and following Williams 1983 and Partee 1986, we assume that both are identical to predicative *be*: in all cases, *be* is a semantically vacuous predicate. We believe, however, that equation/specification involves more structure than predication. One possible way to represent this is by postulating equative and specificational small clauses, extending the proposals in Heggie 1988, Carnie 1995 and Heycock & Kroch 1996. In order to compositionally derive the desired readings, we would then have to say that the heads of these small clauses belong to different types, since they combine with arguments of different types (an individual in equation, but a set in specification).

In this context, and given the empirical distinction between DemPs and FRPs, two hypotheses are plausible. The strong hypothesis would be to say equation and specification map onto FRPs and DemPs respectively. The weaker hypothesis would allow DemPs to be ocassionally equative. We will see below that only the weaker hypothesis can be faithfull to the facts.

4. Specificational Pseudoclefts in Greek II

Recall what the issues are that we have to account for:
(i) The difference underlying the constraints in the use of FRPs and DemPs.
(ii) The difference between neuter and nonneuter DemPs.
(iii) The ungrammaticality of plain copular nonpivots.
(iv) The 'addition' effect in copular nonpivots.
(v) The difference between English and Greek wrt to copular nonpivots.

First, we deal with (i) and (ii). Then, we examine pseudoclefts with copular nonpivots and address the issues in (iii)-(v).

4.1. Two Types of Specificational Pseudoclefts

(a) *Demonstrative pseudoclefts as specificational sentences*
Consider first the straightforward cases: DemPs with pivots containing count or mass nouns:

(43) Afto pu efaje o Petros itane patates.
this that ate the Peter was.3sg potatoes
"What Peter ate was potatoes."

(44) Afto pu agorase o Petros itan afto to palio leksiko.
this that bought the Peter was this the old dictionary
"What Peter bought was this old dictionary."

The demonstrative nonpivot receives its regular interpretation: a singular referring term as (45). The question is how the pivot is interpreted. The examples in (46) help us answer this question.

(45) [[afto pu efage o Petros]]= ιx [ate (Peter, x)],
where ιx [ate (Peter, x)]={x|Peter ate x∧¬∃x'[Peter ate x' ∧ x'< x]}

(46) a. Afto pu efaje o Petros itane patates, pagota, fistikia ke proino
this that ate the Peter was potatoes ice creams, nuts and breakfast
"What Peter ate was potatoes, ice creams, nuts and breakfast."

b. Afto pu efaje o Petros itane, metaksi alon, pagoto.
this that ate the Peter was among others the ice-cream
"What Peter ate was, among other things, ice-cream."

c. Afto pu efaje o Petros itane, ja paradigma, pagoto.
this that ate the Peter was for example ice-cream
"?What Peter ate was, for example, ice-cream."

The pivot in (46a) contains more than one item, indicating that there were more than one thing that Peter ate. Yet this does not entail that the nonpivot is interpreted as a set. One could argue that a collective interpretation of the objects (which would license the 'part of' relation and thus the plural interpretation of the demonstative clause) is possible. The felicity of *among other things* and *for example* in (46b,c) is, in this respect, decisive. *Among other things* and *for example* have been used as diagnostics for non-exhaustive, *mention-some* readings (cf. Groenendijk & Stokhof 1984, Merchant 1998). The appropriateness of nonexhaustive modification indicates that in these cases the nonpivot is interpreted as an open set, rather than as an (atomic or plural) individual. Note that nonexhaustive set modification is fine in the English *what* sentences too. We conclude then that the pivots in (43) and (46) are intepreted as sets specifying what Peter ate, as in (47):

(47) a. [[(43)]]= > {x|Peter ate x} = {potatoes}
b. [[(46a)]]= > {x| Peter ate x} = {potatoes, nuts, ice-cream, breakfast}
c. [[(47b)]] = > {x| Peter ate x} = {ice-cream,...}

Likewise, (44) has the logical form in (48). Modification by *among others,* and *for example* is possible, as we see in (59):

(48) [[(44)]] = > {x| Peter bought x}= {this old dictionary}

(49) Afto pu agorase o Petros itan, metaksi alon/ja paradigma, afto to palio leksiko.
this that bought the Peter was, among others/forexample,.
"What Peter bought was, for example/among others, this old dictionary."

Nonneuter DemPs, like (50) cannot be analyzed as specificational. Note that the pivot may not contain more than one item, and modification by *among others,* and *for example* is not tolerated, as is shown (51) and (52):

(50) Aftos pu filise ti jineka su itan o Petros. (Veloudis 1979a:!3)
this.masc.sg that kissed the wife yours was the Peter
"The one who kissed your wife was Peter."

(51) * Aftos pu filise ti jineka su itan o Petros ke o Pavlos.
this.masc.sg that kissed the wife yours was the P. and the P.
"*The one who kissed your wife was Peter and Paul."

(52) * Aftos pu filise ti jineka su itan metaksi alon/ja paradigma o Petros.
this.masc.sing that kissed the wife yours was among others/for example the P.
"*The one who kissed your wife was, among others/for example, Peter."

If we want to talk about more than one individual, the plural form *afti* "ones.masc.pl" must be used instead (in Greek as well as in English).

(53) Afti pu filisan ti jineka su itan o Petros ke o Pavlos
.this.masc.pl that kissed the wife yours was the Peter and the Paul
"The ones who kissed your wife is Peter and Paul."

Agreement, present in nonneuter DemPs but absent in neuters, has thus an intepretative effect: it licenses equative readings in DemPs. Cases like (51) and (52) should then be handled as type mismatches (recall that equated objects must of the same type). If this is correct, we have to assume that information coming from agreement is meaningful and visible at the level at which pseudoclefts are interpreted.

(b) Free relative pseudoclefts as equations
The simlest case here is provided by FRPs with two FRs, like (54). Since oti-FRs denote plural individuals (cf. (55)), the FRPs at hand express an equation between two plural individuals as in (56):

(54) Oti aresi stin Elena ine oti sixenete o Petros.
what(ever) likes in-the Elena is oti detests the Pete
What Elena likes is what Peter hates.

(55) a. $[\![\text{oti IP}]\!] = > \iota x\ [x \in [\![IP]\!] \wedge \forall x'[x' \in [\![IP]\!] \rightarrow x' < x]]$
b. $[\![\text{the } N_{plural}]\!] = > \iota x\ [x \in [\![N]\!] \wedge \forall x'[x' \in [\![N]\!] \rightarrow x' < x]]$

(56) a. $[\![\text{oti aresi stin Elena}]\!] => \iota x\ [\text{like (Elena, x)} \wedge \forall x'\ [\text{like (Elena, x')} \rightarrow x' < x]]$
b. $[\![\text{oti sihenete o Petros}]\!] => \iota x\ [\text{hate (Peter, x)} \wedge \forall x'\ [\text{hate (Peter, x')} \rightarrow x' < x]]$
c. $\iota x\ [\text{like (Elena, x)} \wedge \forall x'\ [\text{like (Elena, x')} \rightarrow x' < x]] =$
$\iota x\ [\text{hate (Peter, x)} \wedge \forall x'\ [\text{hate (Peter, x')} \rightarrow x' < x]]$

It is also conceivable to treat the (54) as involving properties rather than individuals, in which case the ι would range over objects of type <e, t>. Pseudoclefts with *afto pu* clauses in both

positions, as in (57), express exactly the same equation relation, this time between unique atomic individuals. We illustrate this in (58):

(57) Afto pu aresi stin Elena ine afto pu sixenete o Petros.
this that likes in-the Elena is this that detests the Peter
What Elena likes is what Peter hates (namely cooking).

(58) a. [[afto pu IP]] = > ιx [x ∈ [[IP]] ∧ ¬∃x'[x'∈ [[IP]] ∧ x' < x]]
b. [[afto pu aresi stin Elena]] => ιx [like (Elena, x)
∧ ¬∃x'[like (Elena,x') ∧ x' < x]]
c. [[afto pu sihenete o Petros]] = > ιx[hate (Peter, x) ∧¬∃x'[hate (Peter,x') ∧ x' < x]]
d. ιx [like (Elena, x) ∧ ¬∃x'[like (Elena,x') ∧ x' < x]] =
ιx[hate (Peter, x) ∧¬∃x'[hate (Peter, x') ∧ x' ≤ x]]

Appending something like *metaksi alon to majirema* "among other things cooking", which we use as diagnostics for specificational readings, would yield ungrammaticality. We can have equations of functional types too (cf. Groenendijk & Stokhof 1984, Engdahl 1986, Chierchia 1993, Dayal 1996, Sharvit 1997), with FRPs as well as with DemPs, as shown in (59), (60):

(59) Oti/afto pu aresi se kathe andra ine oti sixenete kathe jineka.
what(ever)/this that likes every husband is what detests every wife
"What every husband likes is what every wife hates."

(60) a. [[afto pu aresi se kathe andra]] = ιg [Dom(g) = [[husband]] ∧ ∀x∈ [[husband]] → like(x, g(x))]
b. [[afto pu sihenete kathe jineka]] = ιf [Dom(f) = [[wife]] ∧ ∀x∈ [[wife]] → detest (x, f(x))]
c. ιg [Dom(g) = [[husband]] ∧ ∀x∈[[husband]] → like(x, g(x))] =
ιf [Dom(f) = [[wife]] ∧ ∀x∈[[wife]] → detest (x, f(x)]

Finally, consider the ungrammatical (9) repeated here for convenience:

(9) *Oti agorase o Janis itan afto to palio leksiko.
what(ever) bought John was this the old dictionary
"*Whatever John bought was this old dictionary."

(9) is ungrammatical because its pivot is defined on atoms and not on plural individuals as is required by the semantics of the *oti* FR for the purposes of equation. It will therefore be ruled out as a type mismatch, cf. (61):

(61) a. [[oti agorase o Petros]] = > ιx[bought (Peter, x) ∧∀x'[bought (Peter,x')→ x' < x]]
b. [[afto to palio leksiko]] = > ιx [x∈ [[old dictionary]]∧¬∃x'[x'∈ [[old dictionary]]
∧ x' < x]]
c. ιx[bought (Peter, x) ∧∀x'[bought (Peter, x') → x' < x]] ≠
ιx [x∈ [[old dictionary]] ∧ ¬∃x'[x'∈ [[old dictionary]]∧ x' < x]]

Such mismaches do not arise with specification, so the DemP counterpart of (9), (44), is fine. We predict here that if we insert a plural individual in the pivot, (9) will improve. This is

precisely what we get, as illustrated in (62) with a mass noun (a plural definite would give a samilar result):

(62) Oti efaje o Petros oli mera itane patates.
what(ever) that ate the Peter was potatoes
What Peter ate all day was potatoes.

We conclude that the empirical contrast between FRPs and DemPs can be successfully captured by the distinction bewtween equation vs. specification we defined in (42).

4.2. Copular nonpivots in Greek and English

Recall the ungrammatical examples repeated here as (63), (64):

(63) *Afto pu ine o Pavlos ine vlakas.
this that is the Paul is stupid
"What Paul is is stupid."

(64) *Oti ine o Pavlos ine vlakas.
what(ever) is the Paul is stupid
"*Whatever Paul is is stupid."

Consider now what the demonstrative version of this example would mean.Because we have a demonstrative, it would probably be something like (65a), namely the unique property that John has (thus implicity assumming that *afto* is crosscategorial). The pivot identifies that unique property with the property of being stupid, as in (65b):

(65) a. [[afto pu ine o Janis]] = ιP [John is P]
b. ιP [John is P] = {stupid}

However, the representation in (65b) in not a wellformed list. Rather, it yields an equation between a unique property and a singleton set containing that property, which in turn is not a wellformed equation: it violates the matching requirement since α and β are not of the same semantic type. Cases like (65a) are then excluded because, on the one hand, they are not wellformed lists, and on the other, they cannot give rise to wellformed equations.

Addition of material in the nonpivot suspends uniqueness and renders a set interpretation possible. Consider for instance the case of negation in (66) and the possible translations of the nonpivot in (67a & b):

(66) Afto pu dhen ine o Janis ine vlakas.
this that not is the John is stupid
What John isn't is stupid.

(67) a. [[afto pu dhen ine o Janis]] = ιP [John is ¬ P]
b. [[afto pu dhen ine o Janis]] = λP [John is ¬ P]

According to the translation in (67a) the nonpivot denotes the unique property that John does not have. But this is not the right interpretation for the nonpivot, as shown by the fact that

possible continuations like the ones in (68), which void uniqueness and indicate a set interpretation, are legitimate:

(68) a. Afto pu dhen ine o Janis ine vlakas, kutos ki akindhinos.
this that not is the John is stupid silly and harmless
What John isn't is stupid, silly and harmless.
b. Afto pu dhen ine o Janis ine, metaksi alon, akindhinos.
this that not is the John is, among others, harmless
What John isn't is, among other things, harmless.

Hence, the *afto pu* nonpivot is not equivalent to the unique property that John does not have. Rather negation opens up the domain and it enables the creation of a set which will specify properties that John does not have. The nonpivot will enumerate these properties. The right interpretations for (66) and (68a,b) are then (69a,b,c), respectively:

(69) a. {P| John is not P} = {stupid}
b. {P| John is not P} = {stupid, silly, harmless}
c {P| John is not P} = {stupid,...}

In other words, the set containing the property of being stupid is included in the set containing the properties that John does not have, and the set {stupid, silly, harmless} is a subset of the same set in (67b).

In the same vein, *episis* 'also' in (70) opens up the domain and enables the creation of a set which will include additional properties of John, as in (71). The property of being a miser would be included in that set:

(70) Afto pu episis ine o Janis ine tsigounis.
this that also is the John is miser
The other thing John is is a miser.
(71) {P|John is also P} = {miser}, or {miser} $\subseteq$ {P|John is also P}

The modal in (72) has exactly the same effect, but this time we he have a set of possible properties of John's:

(72) Afto pu prepi na ine o Janis ine dinamikos.
this that must subjunctive is the John is dynamic
What John must be is dynamic.
(73) {P|J. is possibly P}=dynamic}, or{dynamic}$\subseteq${P|J. is possibly P}

The Catalan and Spanish facts presented in 2.2.2 are amenable to exactly the same analysis, but space prevents us from elaborating. The 'addition' effect is therefore accounted for under the assumption that DemPs are specificational in the sense of list identifying. This assumption also predicts that addition will have no effect in FRPs, since these are equational, and equations of the form in (63b) are illformed. The examples in (13)-(15) show this prediction to be fully borne out .

Recall now that plain copular *what* nonpivots are grammatical (cf. the translation of (63)). Does this follow from our system? The answer is positive. We assume, following Partee 1985, Jacobson 1995, and Heycock & Kroch 1996, that *what* is crosscategorial. Hence,

reference to properties, as is required for the interpretation of this sentence, is licit. Because *what,* unlike the demonstrative *afto*, is not by default associated with (unique) reference, it may denote a set, in this case a singleton:

(74) {P| John is P} = {stupid}

Note that this is consistent with Jacobson's view of *what*-FRs starting out as sets and then type-shifting to the individual intepretation. As our English informants tell us, it is possible to manipulate the context in such a way so that *among other things*, and *for example* modification on *what*-SPPs would be possible, as expected, since we are dealing with specifications.

Finally, why are *-ever* FRPs are excluded? (We refer now to the * translation of (64)). The answer is straightforward. *Whatever* is excluded for the same reasons Greek FRPs are excluded: *-ever* FRs would always contribute individuals and would thus give rise to illformed equations. An additional constraint here would be imposed by of the nature of free choice quantification (see Dayal 1997, Giannakidou 1997b).

We showed how our analysis handles the relevant Greek facts, and we presented a couple of tests diagnozing set intepretations in specificational pivots. Our analysis extends directly to Spanish and Catalan. Moreover, Izvorsky 1997 presents some discussion of Bulgarian demonstrative SPPs, supporting the distinction between equation and specification made here and the ensuing predictions, as regards the availability of set intepretation in DemPs and the 'addition effect'. It would be interesting to see whether our account can predict the behavior of specificational pseudoclefts in more languages, but this unfortunately will have to be left for future research. Another improtant task is to identify precisely what types of expressions can induce the 'addition effect'. We have discussed here negation, 'also', and deontic modals (epistemic modals have the same effect) as cases in point for Greek, note, however, that in Spanish and Catalan various kinds of modification in the nonpivot are able to bring about the set intepretation, even word order (cf. fn.2). For a more refined understanding of the 'addition'effect , more research towards identifying the class of possible inducers is required.

5. Conclusion

Two conclusions should be drawn from this paper. First, Greek *has* specificational pseudoclefts, and Spanish/Catalan were shown to be similar in this respect. Second, there is considerable empirical support for a distinction between equation and specification, connecting to Higgins's original view of the heterogeneity of the non-predicational domain. Iatridou &Varlokosta's 1997 account cannot be maintained in the light of these conclusions. Greek, Spanish, and Catalan do form a natural class in terms of excluding plain copular nonpivots, but this was shown to follow not from the exclusion of predicative interpretations altogether as proposed by Iatridou & Varlokosta, but from the inability of plain copular nonpivots to be intepretated as predicates *by default.*

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Pseudoclefts and Ellipsis

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1 Introduction

1.1 Connectivity effects in specificational pseudoclefts

A hotly debated issue in generative linguistic theory through the years has been the behaviour of specificational pseudocleft constructions (SPCs, for short) in the domain of 'connectivity' or 'connectedness' effects. Four such effects have figured prominently in the literature:

(1) *binding*
  a. what *he* is is [angry with {*himself*/**him*/**John*}][1]
  b. *he* is is [angry with {*himself*/**him*/**John*}]

(2) *opacity (de dicto/de re)*
  a. what John seeks is [a unicorn] [*de re* or *de dicto*]
  b. John seeks [a unicorn] [*de re* or *de dicto*]

(3) *bound variable anaphora*
  a. what *nobody* bought was [a picture of *his* house]
  b. *nobody* bought [a picture of *his* house]

(4) *negative polarity item (NPI) licensing*
  a. what *nobody* bought was [*any* wine]
  b. *nobody* bought [*any* wine]

In all of these cases it seems like the SPCs behave like their simple-clause counterparts in the b-examples, where the binder c-commands the bindee in (1), (3) and (4), and the intensional verb *seek* takes *a unicorn* as its complement. But in surface syntax the SPC certainly does not look like a simple clause, and no relationship seems establishable between the constituents that entertain a dependency relationship of some sort in the examples above. The question that SPCs pose, then, is how the apparent lack of a structural relationship between constituents of the *wh*-clause and the 'counter-weight' (as Heycock 1994 labels it) can be 'set straight' at some point in the derivation of specificational pseudoclefts.

The literature on SPCs has brought forth a variety of approaches to the problem, which can basically be grouped into three sets:

(i) *the semantic approach* (cf. Sharvit 1997 for a recent representative)
- seeks to derive the facts without syntactic c-command/constituency
- binding etc. is viewed as a side effect of semantic composition
- the semantic properties of *what* and *be* play a key role

(ii) *the syntactic reconstruction approach* (cf. Heycock & Kroch 1996, Bošković 1997)
- the 'counterweight' is 'moved into' the *wh*-clause at LF
- thus c-command/constituency is established at LF

(iii) *the ellipsis approach* (cf. Ross 1997)
- assumes that the 'counterweight' is a full IP before and after Spell-Out (cf. (5) below)
- thus has c-command/constituency at all levels of syntactic representation
- PF ellipsis reduces the 'counterweight' in cases in which it is smaller than IP

[1] Coreference is marked with italicisation here; *him* and *John* are fine in (1) if counterindexed with *he*.

This paper will not concern itself in much detail with (i); instead, it argues against approaches along the lines of (ii), siding with the ellipsis approach in (iii) for a *subset* of SPCs. Specifically, this paper will argue for:

(iv) *the 'two types of specificational pseudocleft' approach* (this paper)
- assumes that the 'counterweight' is a full IP before and after Spell-Out **only for a well-delineated subset of SPCs**
- establishes a link between this subset of SPCs and **Question-Answer pairs** (QAPs)
- reduces connectivity effects concerning **NPI** licensing to syntactic c-command
- but leaves the other connectivity effects to be treated in a different way

1.2 Two types of specificational pseudoclefts

The present paper thus aims to contribute to the discussion about pseudocleft constructions by presenting an extended argument for a distinction within the set of SPCs between two significantly different subtypes, Type A and Type B. Quintessential examples of Type A SPCs involve full-IP 'counterweights', as illustrated in (5):[2]

(5) a. what John bought was [he bought some wine]
b. what John didn't buy was [he didn't buy any wine]

We will argue that a subset of SPCs with apparently 'smaller-than-IP' counterweights should be analysed as **elliptical** counterparts of full-IP SPCs of the type in (5) — in particular, those featuring connectivity effects with Negative Polarity Items (NPIs) in SPCs, which we argue should be kept distinct from the other connectivity exemplified in (1)-(4), above.

(6) a. what John bought was [~~he bought~~ some wine]
(i.e. *what John bought was some wine*)
b. what John didn't buy was [~~he didn't buy~~ any wine]
(i.e. *what John didn't buy was any wine*)

Our prime cue to the distinction between NPI connectivity and other such effects comes from the fact that, while the connectedness effects shown in (1)-(3) are preserved when the word order of the pseudoclefts is turned around, as in (7a-c), the NPI connectivity case in (4) breaks down under 'inversion', as (7d) shows. It is this ban on 'inversion' which SPCs of the type in (4) share with the full-IP SPCs in (5), as seen in (8).[3]

(7) a. [angry with {*himself*/**him*/**John*}] is what *he* is
b. [a unicorn] is what John seeks [*de dicto* or *de re*]
c. [a picture of *his* house] is what *nobody* bought
d. *[*any* wine] was what *nobody* bought

(8) a. *[he bought some wine] was what John bought
b. *[he didn't buy any wine] is what John didn't buy

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[2] cf. Clifton (1969:38), Ross (1972:89), Higgins (1979:47), Kayne (1998:26). Higgins (1979:86) points out that for him sentences of this type are ungrammatical, sounding 'irremediably anacoluthic'; he suggests that 'these sentences have arisen, historically, by analogy to question-answer pairs'. In his fn. 11 he compiles a wealth of interesting empirical evidence to underpin the links between SPCs of the type in (5) and Question-Answer pairs. We will capitalise on this connection in this paper.

[3] We are using the term 'inversion' in a pre-theoretical sense here, not making any claim with regard to the way in which it comes about (i.e., via Predicate Inversion in the technical sense of the term, or some other means). We will use 'invert' and 'reverse' interchangeably.

Irreversibility thus diagnoses Type A SPCs: on the basis of the fact that full-IP SPCs like (5) do not reverse, we will classify all SPCs with 'smaller-than-IP' counterweights that fail to reverse as Type A SPCs. All those SPCs which do exhibit reversibility, on the other hand, are Type B SPCs. Along with their irreversibility, Type B pseudoclefts never exhibit NPI connectivity.

There is a third component to the clustering of properties which tease apart Type A and Type B SPCs, which we will also use as a diagnostic tool in our exposition — the distribution of SPCs in the small-clausal complement of verbs like *call* and *describe as*[4]. While these small clause complements allow for SPCs with a *wh*<XP word order in principle, as shown in (9), they resist SPCs which are unequivocally of Type A, whether elliptical or 'undeleted', as shown in (10):

(9) a. I'd call [what John is {frustrated/a fool}]
b. I'd describe [what John is as {frustrated/a fool}]
(10) a. *I'd call [what John didn't buy [~~John didn't buy~~ any wine]]
b. *I'd describe [what John didn't buy as [~~John didn't buy~~ any wine]]

Whenever a pseudocleft with a nominal or adjectival counterweight fails to be embedded under verbs like *call* and *describe as*, we can be sure that we are dealing with a Type A SPC[5]. It is in this way that we will call upon the distribution of SPCs under *call/describe as* in the bulk of the paper: as a diagnostic for Type A status. In section 6 we will come back to the question of what the proper treatment of the examples in (9) should look like — with hindsight, after we have discussed the restrictions on the distribution of Type A SPCs.[6]

Throughout, what we see is that the following descriptive generalisation holds:

(11) NPIs are found in the counterweight of SPCs only where full-IP SPCs are licensed

Viewed this way, then, the NPI licensing effects seen in SPCs like the ones in (4) do not involve 'connectivity' in the strict sense of the term at all. Rather, the NPI is directly c-commanded by its licensor throughout the syntactic derivation, from Merge via Spell-Out through to LF. In section 2 we

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[4] The small clauses in (9) count as SPCs by the selection test (see Higgins 1979:). It is not John's profession or role that is described as frustated, but John himself; likewise, John's profession is not described as being a fool (in the 'court jester' sense) in the most natural reading of (9).

[5] The verbs *call* and *describe as* impose categorial restrictions on the small clause they govern: in the frames *call XP YP/describe XP as YP*, YP may be adjectival or nominal (including gerundives, free relative, proper names), but not prepositional, verbal (participial) or clausal (finite or non-finite IP/CP):

(i) a. John called me frustrated/boring/clever
b. John called this his favorite/being silly/what he always wanted/Geronimo
c. * John called XP in the bath/for my birthday/with no sense
d. * John called XP (that) he had left/(for him) to have left
e. * John called XP bought some wine/run a mile

(ii) a. John described me as frustrated/boring/clever
b. John described this as his favorite/being silly/what he always wanted/Geronimo
c. * John described XP as in the bath/for my birthday/with no sense
d. * John described XP as (that) he had left/ (for him) to have left
e. * John described XP as bought some wine/run a mile

Thus, there are probably independent reasons why SPCs with PP, VP, IP or CP counterweights fail under these verbs. But SPCs with AP and DP counterweights do occur in this context, cf. (9). The striking failure of (10) thus supports our claim that counterweights containing NPIs are actually IPs, not DPs.

[6] The reason for this cautionary note with regard to the examples in (9) lies in the fact that embedding *wh*<XP SPCs under ECM (and raising) verbs is often claimed to yield ungrammatical results in all cases (cf. Higgins 1979). We will have more to say about this issue in section 6; electing not to burden the text discussion with questions concerning the analytical status of (9) at this point, we will put the question on reserve until the distributional restrictions on SPCs have been properly catalogued and accounted for.

will show that this is a decisive advantage of the ellipsis approach to NPI 'connectivity' in SPCs when compared to syntactic reconstruction accounts à la Heycock & Kroch (1996) and Bošković (1997).

There is evidence of various kinds (involving reversibility, NPI connectivity and distribution in small clause complements to verbs like *call*), then, to support a two-way split in the set of SPCs:

(A) a. Type A SPCs systematically involve full-IP counterweights
b. the fact that their counterweights may look smaller than IP is the result of **ellipsis** (specifically, Forward Deletion; cf. Wilder 1997)
c. NPI 'connectivity' involves regular c-command in the full-IP syntactic representation of the counterweight (cf. (2b) with (1b))

(B) a. Type B SPCs systematically feature 'smaller-than-IP' counterweights
b. there is no ellipsis in Type B SPCs
c. hence Type B SPCs do not feature NPI connectivity

The representation of Type A SPCs is our primary focus in this paper. We will liken their analysis to that of Question-Answer pairs (QAPs), which likewise show (optional) ellipsis and NPI connectivity, as seen in the parallel between (6) and (12):

(12) a. what did John buy? — [~~he bought~~ some wine]
b. what didn't John buy? — [~~he didn't buy~~ any wine]

The link with QAPs leads us to argue that the *wh*-clause in Type A SPCs should be analysed as an interrogative CP, *not* as a free relative.

The paper is organised as follows. In section 2 we will consider in detail the NPI connectivity effects exhibited by SPCs and QAPs, analysing them in terms of straightforward S-structure c-command obtaining in a counterweight/answer IP which is subject to optional ellipsis. Section 3 then addresses the restrictions on the ellipsis process operative in Type A SPCs and QAPs, against the background of Wilder's (1997) study of ellipsis in coordinate structures. A compendium of further evidence for the connection between QAPs and Type A SPCs is presented in section 4. Section 5 outlines the structural representation of Type A SPCs that we would like to propose. And finally, section 6 considers Type B SPCs and the connectedness effects that they exhibit, suggesting possible ways of coming to terms with these.

2 NPI connectivity in specificational pseudoclefts and Question-Answer pairs

2.1 NPIs and S-structure licensing

Negative Polarity Items are elements which must be licensed by a c-commanding negation (or affective operator; we will focus on the Neg-licensed cases); specifically, an inspection of the empirical facts shows that the licensing negation must c-command the NPI *at S-structure* in most cases. This is brought out by a comparison of the examples in (13):

(13) a. everybody didn't come [*every<not / not<every*]
b. many students didn't come [*many<not / not<many*]
c. *any student didn't come

While, as (13a,b) show, it is possible for the sentential negation to scope over a quantified subject at LF, (the *not<every/many* readings being grammatical), the lack of an S-structure c-command relationship must ostensibly be held responsible for the ungrammaticality of (13c), featuring an NPI in a subject position potentially c-commanded by the negation at LF. That the ungrammaticality of (13c) is not due to some ban on NPIs in subject positions is shown by the contrast between (13c) and the examples in (14), which all are like (13c) in featuring the NPI in subject position but differ from it in that the negation c-commands the NPI at S-structure.

(14) a. never did any students come
b. didn't any students come?
c. he doesn't think that any students came
d. there wasn't any students in the lecture hall
e. ?there didn't happen an accident of any kind

The fact that NPIs must appear in the scope of a negation at S-structure is further underscored by the ungrammaticality of the following sentences, which shows that A´-movement of an NPI or a constituent containing an NPI away from the licensing negation, into a position not c-commanded by the negation at S-structure, is not allowed, even though LF-reconstruction should be able to restore a c-command relationship between the NPI and its prospective licensor.[7]

(15) a. *any students, I didn't see [contrast *I didn't see any students*]
b. *see any students, I didn't

The sensitivity of NPI licensing to *S-structure* c-command in cases like the above allows us to distinguish between the various approaches to SPCs presented in the literature. In particular, syntactic reconstruction approaches to SPCs à la Heycock & Kroch (1996) and Bošković (1997) seem to establish the requisite c-command relationship between the NPI and its licensor at too late a point in the derivation: only at LF does the negation c-command the *any*-phrase. The ellipsis approach, by contrast, has the negation c-commanding the NPI throughout the derivation, in the IP counterweight:

(6b) what John didn't buy was [~~he didn't buy~~ any wine]

The same problem is posed by QAPs, which likewise allow for an NPI in the answer to apparently be licensed by a negation in the question. The ellipsis approach once again reduces the licensing problem to a simple case of S-structure c-command in an elliptical IP:

(12b) what didn't John buy? — [~~he didn't buy~~ any wine]

This is a decisive advantage of the ellipsis approach to (Type A) SPCs and QAPs with respect to (English) NPIs, which, as (15) showed, resist standard 'reconstruction'/LF licensing, requiring to be c-commanded by their licensor at S-structure in the bulk of cases.

2.2 *NPIs in preverbal subjects, and post-S-structure licensing*

As Uribe-Echevarria (1994) shows, however, there are certain conditions under which an NPI may occur within a preverbal subject, not c-commanded by a licensing negation at S-structure. Relevant examples are given in (16) and (17):

(16) a. [a doctor who knew anything about acupuncture] wasn't available
b. *[a doctor who knew anything about acupuncture] wasn't sitting on the floor
(17) a. [that anyone would leave the company] wasn't mentioned in the meeting
b. *[that anyone will leave the company] wasn't mentioned in the meeting

The conditions under which NPIs in preverbal subjects can be licensed are complex (see Uribe-Echevarria's work for detailed discussion). We need not be concerned with these here. What matters for our purposes in this paper is that precisely under the circumstances in which NPIs in preverbal subjects are licensed in (16) and (17), we also find them in both SPCs and QAPs:

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[7] As a matter of fact, (15b) continues to be ungrammatical when turned into a biclausal construction with a negation in the upstairs clause and topicalisation downstairs, as seen in (i):
(i) *he doesn't think that [see any students], he will
This suggests that a 'topic island' effect constrains NPI licensing as well — something which follows (from subjacency) on an LF-movement approach to NPI licensing; see Moritz & Valois (1992) for relevant discussion.

(18) a. what wasn't available was [a doctor who knew anything about acupuncture]
b. *what wasn't sitting on the floor was [a doctor who knew anything 'bout acupuncture]
(19) a. what wasn't mentioned in the meeting was [that anyone would leave the company]
b. *what wasn't mentioned in the meeting was [that anyone will leave the company]
(20) a. ?what wasn't mentioned in the meeting? — [that anyone would leave the company]
b. *what wasn't mentioned in the meeting? — [that anyone will leave the company]

That we are dealing with Type A SPCs in (18) and (19) is evident from the fact that the grammatical examples resist inversion as well as embedding under verbs like *call*:

(21) a. *[a doctor who knew anything about acupuncture] was what wasn't available
b. *[that anyone would leave the company] was what wasn't mentioned in the meeting
(22) a. *I'd call what wasn't available [a doctor who knew anything about acupuncture]
b. *I'd call what wasn't mentioned in the meeting [that anyone would leave]

The contrast between the grammatical examples in (18a) and (19a) and their ungrammatical counterparts in (21)-(22) is sharp. Of the starred examples, the cases in (21) are perhaps the most striking ones, in the light of the grammaticality of the examples in (16a) and (17a), which have the same linear order as the ill-formed pseudoclefts in (21). The facts in (16)-(22) thus strongly confirm our claim that NPI connectivity effects are a property of Type A SPCs only.

2.3 NPIs in postverbal subjects of expletive constructions

2.3.1 there *expletive constructions*

Other NPI related facts do, too. Consider, first of all, the SPC in (23a) and the QAP in (23b):

(23) a. ?what didn't happen was [an accident of any kind]
b. ?what didn't happen? — [an accident of any kind]

These examples are acceptable (though perhaps slightly marginal) — surprisingly, it seems, given the ungrammaticality of (24). But in English indefinite subjects of (certain) intransitive sentences can occur postverbally, in *there* constructions. And as already shown in (10e), repeated below, NPI licensing in the *there* counterpart of (24) succeeds.

(24) *[an accident of any kind] didn't happen
(10e) ?there didn't happen an accident of any kind

What this means for (23) is that they can be derived as elliptical variants of the full-IP examples in (25), which have the same level of acceptability as (23), as expected.

(25) a. ?what didn't happen was [there didn't happen an accident of any kind]
b. ?what didn't happen? — [there didn't happen an accident of any kind]

In support of the claim that the SPC in (23a) is derived from a full-IP Type A SPC à la (25a), featuring expletive *there*, we point out NPI connectivity effects of the type in (23a) are found only in contexts which accept *there* expletives. To see this, contrast the example in (23a) with cases like (26), which are crashingly bad, on a par with the ungrammaticality of the *there* sentences in (27).

(26) a. *what didn't annoy Mary was an accident of any kind
b. *who didn't laugh was any of Bill's students
(27) a. *there didn't annoy Mary an accident of any kind
b. *there didn't laugh any of Bill's students

It is precisely in those contexts in which English allows postverbal subjects containing an NPI in *there* sentences that we find grammatical SPCs with NPI connectivity of the type in (23a).

Note furthermore that, just like (25a) is irreversible and unembeddable under verbs like *call* (as shown in (29)), so is (23a), as (28) illustrates:

(28) a. *[an accident of any kind] didn't happen
b. *I'd call what didn't happen [an accident of any kind]
(29) a. *[there didn't happen an accident of any kind] was what didn't happen
b. *I'd call what didn't happen [there didn't happen an accident of any kind]

So what we find, once again, is full parallelism (i) between SPCs and Question-Answer pairs, and (ii) between Type A SPCs with full-IP counterweights and SPCs featuring NPI connectivity.

2.3.2 it *expletive constructions*

A final case showing that SPCs with NPI connectivity parallel Type A SPCs with full-IP counterweights is introduced by the examples in (30):

(30) a. what happened next was [that he fell]
b. what happened next was [he fell]

These two examples seem superficially very similar. Yet there is quite a bit of evidence that they are in fact entirely different in structure and derivation. We will approach the matter from the perspective of the properties of the SPC in (30a), which — of the two cases in (30) — is the one which furnishes the argument for a link between NPI connectivity and Type A structures.

Consider the following facts about SPCs of the type in (30a):

(31) a. what happened next was [that he fell] (= (30a))
b. [that he fell] was what happened next
(32) a. ?what happened next was [it happened next [that he fell]]
b. *[it happened next [that he fell]] was what happened next
(33) a. what didn't happen next was [that anybody fell]
b. *[that anybody fell] was what didn't happen next
(34) a. *I'd call what didn't happen next [that anybody fell]
b. *I'd describe what didn't happen next as [that anybody fell]

While (31a) is perfectly reversible, (32a), the full Type A version of (31), is not; and on a par with (32a) but in contradistinction to (31a), the example in (33a), which features an NPI in the counterweight, to be licensed by the negation in the *wh*-clause, is irreversible as well. Moreover, the NPI case in (33a) also resists embedding under the verbs *call* and *describe as*, as seen in (34). This once again vindicates the link we have drawn between NPI licensing in the 'counterweight' of SPCs and a Type A structural analysis. And as before, these Type A SPCs behave like QAPs in all relevant respects:

(35) a. what happened next? — ?[that he fell] (cf. (30a))
b. what happened next? — ?[it happened next [that he fell]] (cf. (32a))
c. what didn't happen next? — ?[that anybody fell] (cf. (33a))

The facts in (31)-(35) can hence be analysed straightforwardly by saying that (30a) allows for two potential derivations, one built on the Type A structure in (36a), which is subject to optional ellipsis and which procures the NPI 'connectivity' effects, and the other based on the Type B representation in (36b), featuring a CP counterweight and no ellipsis (on Type B, see section 6 for more discussion):

(36) a. what happened next was [~~it happened next~~ [that he fell]] (Type A)
b. what happened next was [$_{CP}$ that he fell] (Type B)

As before, the Type B case allows for inversion while the Type A case does not. The example in (31b) hence unequivocally derives from (36b). The examples in (32)-(34), by contrast, can only be built on (36a), the ill-formedness of the unacceptable cases following from the general constraints on the distribution of Type A SPCs.

While this takes care of (30a), things remain to be said about the example in (30b), though. For notice that, in contrast to (30a), the example in (30b) cannot be reversed (cf. (37b)); in concert with this, it does not allow an NPI in the counterweight at all (cf. (38b)),[8] nor can it be embedded under the verbs *call* and *describe as* (cf. (39)):

(37) a. what happened next was [he fell] (= (30b))
b. *[he fell] was what happened next
(38) a. *what didn't happen next was [anybody fell]
b. *[anybody fell] was what didn't happen next
(39) a. *I'd call what happened next [he fell]
b. *I'd describe what happened next as [he fell]

The ungrammaticality of (37b) and (39) will be straightforward if we can ensure that (30b)/(37a) can only be a Type A SPC; put differently, the fact that (37b) and (39) are ill-formed will follow if an analysis of (30b) as in (40), the counterpart of (36b) with a bare IP counterweight, can be excluded on principled grounds:

(40) what happened next was [$_{IP}$ he fell] (* *qua* Type B SPC)

The question that (30b) hence poses is why a Type B scenario for this SPC, à la (40), is apparently unavailable. For (37b) an answer to this question in fact seems relatively easy to give: in general, IPs (such as *he fell* in (37)) cannot be root subjects, as shown by the ungrammaticality of the examples in (41):

(41) a. [*(that) he fell] was the next thing that happened
b. [*(that) he fell] was quite a happening

And though the ill-formedness of (39) on a Type B derivation seems less straightforward at first blush, we can make sense of it along essentially the same lines as (37b) on an analysis of Type B SPCs à la Heggie (1988), Heycock (1991), according to which these involve a small clause predication structure, the *wh*-clause functioning as the predicate and the IP as its subject:

(42) [$_{SC}$ [$_{Subject}$ counterweight] [$_{Predicate}$ *wh*-clause]] [Type B SPCs]

Since a Type B approach to (30b) would thus involve postulating a finite IP subject to a small clause, the general resistance of (finite) IPs to being placed in subject positions will rule out a Type B base for SPCs of the sort found in (30b).

While this plausibly answers the question of why the examples in (37b) and (39) are ill-formed (their ungrammaticality matching that of all Type A SPCs in these contexts), it still leaves (38a) unsolved. We will come back to this construction in sections 3.4 and 3.5, below (see also fn. 6, above, for some pertinent observations). But there is one particular aspect of the ill-formedness of (38a) that invites discussion right here: the question of why it apparently cannot be derived as in

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[8] In point of fact, the problem with (38a) seems to be independent of NPI-licensing *per se*, for (ia) crashes as well, on a par with the QAP in (ib), while (iia,b) are (marginally) acceptable:

(i) a. *?what didn't happen next was [he fell]
b. *?what didn't happen next? — [he fell]
(ii) a. ?what didn't happen (at least) was {[it didn't rain]/[John didn't leave]}
b. ?what didn't happen (at least)? — {[it didn't rain]/[John didn't leave]}

From the perspective of the parallel account of Type A SPCs and QAPs, what the facts suggest is that a negated *wh*-interrogative is unable to take an indirect IP-answer that is not itself negated. Whether the deviance of (i) is a matter of grammatical ill-formedness or infelicitousness of some sort is a matter which we will leave open.

(43b), which parallels (43a), the structure that underlies the grammatical NPI case in (33a) (*what didn't happen next was that anybody fell*). This question prompts a discussion of the restrictions on ellipsis, which will furnish an answer to the question of why the ellipsis structure in (43b) is ill-formed. This will be the topic of the next section.

(43) a. what didn't happen next was [~~it didn't happen next~~ [that anybody fell]] (cf. (36a))
b. *what didn't happen next was [~~it didn't happen next [that~~ anybody fell]]

3 Ellipsis

This paper analyses a subset of SPCs — the ones we have labelled Type A SPCs — in terms of full-IP counterweights which optionally undergo ellipsis. At the end of the previous section we have come across a case where ellipsis in the full-IP counterweight of a Type A SPC fails (cf. (43b)). One of the things we will do in this section is to clear up the cause of the ill-formedness of (43b). We will start out by laying out the general constraints on ellipsis identified in Wilder (1997).

3.1 On the nature of ellipsis

In the discussion so far, with reference to a representation of the type in (43) we have informally referred to material missing at PF as 'deleted' material. There are various views on how deletion should be handled (as discussed in Wilder 1997). For our purposes, it is imperative that we take the view that deleted material is present and 'syntactically active' throughout the derivation (crucially including S-structure; cf. the remarks about NPI licensing in section 2.1) and in LF. We thus reject the view that missing material is absent in S-structure (hence in PF), and gets 'syntactically reconstructed' or 'copied in' in the LF-component.

Two perspectives on ellipsis then remain: either (i) the missing phonological material gets deleted in the PF-component; or — on the view that phonological forms of lexical entries are only inserted after spell-out ('late insertion'; cf. the Distributed Morphology framework of Halle & Marantz 1993) — (ii) the missing phonological material corresponds to terminals of the syntactic representation where form-insertion simply fails to apply. We will not choose between these two, either choice being compatible with what follows; we will generally use 'ellipsis' and 'deletion' interchangeably, without intending a particular bias towards the approach in (i).

Deletion in elliptical answers is argued in Wilder (1997) to be a case of the same operation responsible for 'Forward Deletion'/'Forward Conjunction Reduction' in coordination. We call this operation FWD.

3.2 General constraints on ellipsis (FWD)

FWD is 'syntactically governed'. The units of deletion are syntactic units (though more than one unit may be affected in a given structure); parallelism ('context identity') conditions governing the antecedent-deletion relation refer to syntactic terms such as grammatical function; and the 'content identity' condition must be stated in terms of identity at LF (or perhaps, some notion of 'identity of meaning'). This contrasts with Backward Deletion (BWD), which is operative in so-called *Right Node Raising* constructions. BWD is 'string-governed', with units determined prosodically, and identity determined phonologically.

The main properties of FWD that are relevant here are listed in (44) (see Wilder 1997 for discussion of these in relation to coordination):

(44) *properties of Forward Deletion (FWD)*
a. <u>directionality</u>
The antecedent constituent precedes the deletion site
b. <u>syntactic parallelism</u>

The antecedent constituent and the ellipsis site fulfill the same grammatical function in their respective clauses

c. abstract identity
The antecedent and the deleted constituent are identical at LF

With regard to directionality, FWD seems to be completely strict — the antecedent may not follow the deletion site (BWD underlies the converse requirement, equally strictly; while other ellipsis types, e.g. VP-ellipsis, seem to permit their antecedent to precede or follow the deletion site). No answer — elliptical or not — can precede its question in a well-formed discourse; so the facts concerning QAP ellipsis are consistent with (44a). So too are the facts concerning Type A SPCs. Pseudoclefts with the order XP<*wh* (i.e., reverse Type B SPCs) cannot involve FWD; as a result, licensing an NPI in the XP of a reverse Type B SPC is predicted to be impossible — in conformity with the facts, as we have seen in the above.

The syntactic parallelism requirement (44b) can be thought of as a 'context identity' condition. It is in one sense strict — e.g. a subject cannot license deletion of an object (cf. **John looked at Mary and then she kissed ∅*, contrasting with *John looked at Mary and then ∅ kissed her*) — but in another sense it appears somewhat 'loose', in that it permits the deleted item to be in a different surface position than its antecedent. Likewise, the content identity condition (44c) is both 'strict' and 'loose' — 'strict' in that the LF-content of the deleted constituent must be strictly identical to that of the the antecedent constituent; but to some extent 'loose', in that FWD does not require identity of phonological content.

Taken together, (44b,c) permit an abstract but accurate account of the ellipsis-antecedent relation in QAPs and in SPCs. First consider the examples in (45):

(45) a. what didn't John do? — [∅ buy any books]
b. what John didn't do was [∅ buy any books]
c. John didn't buy any books

Here ∅ corresponds to *John didn't* in the *wh*-clause; in the answer/counterweight, *John didn't* is elided under perfect identity with the antecedent. Notice that in (45a) the negated dummy auxiliary is in a syntactic position different from the one that it is in in the full version of the answer, (45c). This is in perfect agreement with the conditions on ellipsis summed up in (44) — though (44b) demands functional parallelism, there is no constraint which says that the antecedent and the elided element have to occupy identical syntactic positions.

Things get more tricky in the non-negated counterpart of (45), given in (46). It is this paradigm which allows us to illustrate the importance of (44c) for QAPs and SPCs.

(46) a. what did nobody do? — [∅ buy any book]
b. what nobody did was [∅ buy any book]
c. ≠*nobody did buy any book
d. ≠nobody DID buy any book
e. ≠nobody bought any book
f. nobody PAST [buy any book]

Assuming that — just as in (45), where this is ensured by the presence of an NPI in the answer/counterweight — the answer/counterweight in the examples in (46a,b) is a finite declarative IP, the question arises of what the content of the ellipsis site ∅ is. ∅ must contain two deleted constituents, a subject and an auxiliary specified for tense. The subject causes no problem — it is a DP (*John* (in (45), or possibly its pronominal counterpart; we do not decide this here). The case of the auxiliary is less trivial. It cannot be *did* given the ill-formedness of (46c). It could be emphatic *did*, as in (46c), if it matched a parallel emphasis in the *wh*-clause; but the *wh*-clause does not have the meaning of a sentence with emphatic *do* (nor, for that matter, would we expect that a focused auxiliary could be deleted). The ordinary form of the clause expressing the desired neutral declarative meaning is (46e), but in this case, tense is realised on the main verb — clearly in conflict with what we see in the

elliptical answer/counterweight in (46a,b). The only option left is to assume that ∅ contains the PAST morpheme, as in the abstract representation in (46f), before it merges with the verb. So dummy *did* in the *wh*-clause is coupled with PAST in the answer. This is perfectly consistent with (44c). A deleted constituent need not be a literal phonological copy of the antecedent, as long as the LF identity condition is met. And of course, since the dummy *do* has no semantic contribution to make, semantic/LF identity (44c) is respected in (46).[9]

In both (45a) and (46a), the past-tense dummy auxiliary *do* in the question, undergoing Subject-Aux inversion, licenses deletion of the auxiliary in the IP of the answer even though, as pointed out, antecedent and elliptee sit in different syntactic positions. The conditions on ellipsis listed in (44) allow this (most crucially, (44b) is not violated). That it is indeed important not to demand parallelism with respect to syntactic positions when it comes to the licensing of ellipsis is shown also by 'asymmetric' coordinations of the type in (47) (first discussed in Wilder 1997; see Höhle 1991 and Heycock and Kroch 1994 for different views on related examples), this time with reference to subjects rather than auxiliaries. In (47), the postverbal subject in the first conjunct licenses FWD of the subject of the second conjunct. The ungrammaticality of (48) is evidence that the deleted subject is not postverbal in its clause. Hence, a postverbal subject can antecede a preverbal subject — consistent with (44b) :[10]

(47) a. [there ran out the bushes a huge fearsome bear] and [attacked us]
b. [out of the bushes ran a huge fearsome bear] and [attacked us]

(48) a. *there attacked us a huge fearsome bear
b. *attacked us a huge fearsome bear

(49) [out of the bushes ran **a huge fearsome bear**] and
[~~*a huge fearsome bear*~~ attacked us] <FWD

3.3 Maximal ellipsis

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[9] We stress that the token of *do* that we are referring to in (46a) is the dummy auxiliary undergoing Subject-Aux inversion, *not* the main verb *do* following *John*. The distribution of the latter raises questions of an entirely different nature, which we cannot begin to broach here. Eventivity seems to be the most significant factor in licensing the use of *do* in the *wh*-clause of a QAP or SPC — thus note the contrast between **what John did was know French* and *what John did was speak French*, the latter grammatical only on an eventive reading of *speak French* (i.e. being involved in actual conversation in French), not on the alternative interpretation of this phrase which essentially parallels that of *know French*. There seems to be a reasonably strong correlation between the possibility for a VP serve as the answer/counterweight to a *what X do* clause, and the possibility for that VP to be used in the progressive to refer to present events; the 'progressive' test fails only in precisely those environments in which eventive verbs do not occur in the progressive (e.g. infinitives): *what I'll try to do is be home by 6 pm*. Besides eventivity, agentivity of the subject also seems to play an important role. Exactly how the distribution of main verb *do* in QAPs and SPCs can be captured is a question we cannot answer at this time.

In connection with this, also note that *do* can introduce an argument of its own in the form of a PP in the *wh*-clause, the object of P corresponding to the (typically affected) object of the verb in the answer/ counterweight (cf. *what John did to the book was burn it*; see Higgins 1979:201 for other cases). The question that these cases pose is how the correspondence between the object of the PP in the *do* clause and the object of the main verb in the answer/counterweight is given shape. We can think of two suggestions to come to terms with this difficult question: either (i) one assumes that in constructions like these *what+do+to NP* forms one complex *wh*-phrase, matched (or replaced, as in Bošković 1997) by the VP in the answer/counterweight; or (ii) one assumes that the PP is actually present, abstractly, in the answer/counterweight as well. The latter approach would encompass a general perspective on the representation of 'affected' or 'experiencer' arguments — a sentence like *John burnt the book* would then have an underlying representation in which the object appears twice, once as the object of *burn* and once as the object of a covert preposition (cf. (*)*John burnt the book to itself*). We have neither the means nor the space to pursue suggestions along either of these lines; suffice it to say that, whatever the proper treatment of *what John did to the book was burn it* may be, it will not distinguish between the various overall approaches to SPCs reviewed in section 1. We refer ahead to fn. 25, below, for a possible alternative approach to the problem posed by *do+to* cases.

[10] The assumption of a syntactically represented indefinite in the second conjunct of (49) raises questions about how to guarantee the correct interpretation. A possible alternative is that the deleted subject such examples is a 'pronominal correlate' of its antecedent.

Pseudoclefts whose counterweight is a (surface) VP may not contain a finite verb, as seen in (50a). Similarly, a finite VP may not form an elliptical response in a QAP (cf. (50b)), though the corresponding IP-pseudocleft/IP-answer are both perfect (51):[11]

(50) a. *what John did was bought a book
b. what did John do? — *?bought a book
(51) a. what John did was [he bought a book]
b. what did John do? — he bought a book

What this indicates is that ellipsis of the subject alone is not possible in such examples, despite the fact that it is in principle recoverable. This can be made sense of if it is assumed that the appearance of the finite inflection on the main verb signals that Infl has not undergone ellipsis (cf. (52), where 'A' marks the counterweight, and 'XP' is the focused constituent in A).

(52) a. *[what John did ___] was [$_A$ ~~*John*~~ PAST [$_{VP=XP}$ buy a book]] ('bought a book')
b. [what John did ___] was [$_A$ ~~*John PAST*~~ [$_{VP=XP}$ buy a book]] ('buy a book')

The same pattern is found in German (53):

(53) a. *was Hans jetzt tut ist [kauft ein Buch]
what Hans now does is buys a book
b. was Hans jetzt tut ist [er kauft ein Buch]
what Hans now does is he buys a book
c. ?was Hans jetzt tut ist [ein Buch (zu) kaufen]
what Hans now does is a book to buy

The case illustrated in (50)-(53) falls under a wider generalisation. If *any* constituent of the answer is targeted by FWD under identity with antecedents in the question, then *every* such constituent must be deleted.

(54) *maximal ellipsis*
if A undergoes ellipsis, ellipsis must be *maximal* (down to XP)
[where 'XP' = the focused constituent in A; and 'A' = answer/counterweight]]

The effects of (54) are also apparent in the contrast between (52b) and (55)-(56). (52b) indicates that deletion of the answer up to VP (i.e. deletion of the subject and of Aux) is possible. However, this deletion pattern is not licit where the same clause answers the question in (55)-(56). This is due to (54); since the verb can be deleted in (55)-(56), either it must be deleted along with the subject and Aux, or else no deletion applies:

(55) what did John buy?
a. [John bought [$_{XP}$ a book]]
b. [he bought [$_{XP}$ a book]]
c *[buy [$_{XP}$ a book]] *ok in (52b)*
d. [$_{XP}$ a book]

(56) a. what John bought was [$_{IP=A}$ John bought [$_{XP}$ a book]]
b. what John bought was [$_{IP=A}$ he bought [$_{XP}$ a book]]
c. *what John bought was [buy [$_{XP}$ a book]] *ok in (52b)*
d. what John bought was [$_{XP}$ a book]

[11] The fact that the answer in (50b) is perhaps less deviant than the counterweight in (50a) may be attributable to the (marginal) possibility of a 'diary drop' analysis of the answer in (50b); cf. Haegeman (1990) and Wilder (1997).

The ill-formedness of (55c), (56c) and (50) is reminiscent of obligatory ellipsis effects found in gapping constructions (cf. Williams 1997). Neither the subject in (57a) nor the indirect object in (57b) may be overtly realised if it meets the LF-identity requirement for FWD:

(57) a. he$_j$ bought a book and he$_k$ ~~*bought*~~ a record
a'. *he$_j$ bought a book and he$_j$ ~~*bought*~~ a record
b. she gave him$_j$ a book and ~~*gave*~~ him$_k$ record
b'. *she gave him$_j$ a book and ~~*gave*~~ him$_j$ a record

It is plausibly the case that the ill-formedness of (57b) and (57d) on the one hand, and of (55c), (56c) and (50) on the other, is due to a single principle, a generalized version of (54) governing FWD.

3.4 Deletion up to but not into XP

Let us now return to the puzzle we were left with at the end of section 2 — the question of why (43b), repeated below as (58), is apparently an illegitimate representation.

(58) *[what *t* didn't happen next] was [$_A$ ~~*it didn't happen that*~~ anybody fell]

The reason for the impossibility of (58) is to be sought in the factors determining maximal extent of FWD. The remnant of ellipsis in (58) must include the complementiser.

Notice that it is not possible to maintain, in any general sense, that FWD of subconstituents of a finite complement CP is impossible. In (59), FWD deletes constituents of the main clause (including the negation) and of the complement clause, and the result is grammatical:

(59) ?what he didn't say he bought was any wine.
(60) [what he didn't say he bought] was [$_A$ ~~*he didn't say*~~ [~~*that he bought*~~ [$_{XP}$ any wine]]]

Rather, the maximal extent of FWD in the answer/counterweight is determined by the *focus-background structure* of that answer/counterweight, which in turn is determined by form of the *wh*-clause; in particular, of the moved *wh*-phrase. XP, the remnant of FWD in an answer/counterweight, is a *focus phrase*. In a given answer/counterweight, XP is determined with respect to the (surface) form of the corresponding *wh*-clause. XP must correspond to the overtly moved *wh*-phrase, including pied-piped material (even if pied-piped material is 'reconstructed' at LF).

Now notice, crucially, that FWD cannot remove subparts of a focus phrase. This fact is illustrated by the contrast in (61). Though the adjective *fast* may suffice 'semantically' to answer the question in (61a), it does not constitute a well-formed elliptical response to that question (though it does to the question with *how* in (61c)). The surface form of the moved *wh*-phrase determines that the object DP forms the focus constituent in the answer (62b). The deletion in (62a) is illicit.

(61) a. what kind (of car) does he drive? — *fast
b. what kind (of car) does he drive? — a fast car/a fast one
c. how does he drive? — fast
(62) a. *[$_A$ ~~*he drives*~~ [$_{XP}$ ~~*a*~~ [fast] ~~*car*~~]]
b. [$_A$ ~~*he drives*~~ [$_{XP}$ a fast car]]

The same point is illustrated by pied-piped possessors, as in (63). The form of the overtly raised *wh*-phrase determines that the object of the verb is the focus phrase of the response. The ellipsis necessary to generate (63b) represents an illicit deletion of a subpart of the focus XP:[12]

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[12] The ellipsis of NP in the more natural response (i) is licensed by a different operation, independent of FWD; note the grammaticality of *my father's is a very nice car*, which cannot possibly be got via FWD (since the putative antecedent of the ellipsis site does not precede the ellipsis site here).
(i) [$_{DP=XP}$ my father's [$_{NP}$ Ø]]

(63) a. [whose car] did Mary borrow *t*?
b. *[$_{IP=A}$ ~~Mary PAST borrow~~ [$_{DP=XP}$ [my father]~~'s car~~]]
c. [$_{IP=A}$ ~~Mary PAST borrow~~ [$_{DP=XP}$ my father's (car)]]

Returning to the case of SPCs like *what happened next was (that) he fell*, we can observe that the focus phrase in the counterweight to the *wh*-clause is determined — by the form of the *wh*-clause — to be the subject of the verb *happened*. Hence, an elliptical response in which the subject of *happened* is realised by a clause must leave that clause *qua* focus phrase intact. Hence, there is no ellipsis derivation for 'IP-pseudoclefts' of the type **what didn't happen next was anyone fell* as in (58), or, for that matter, for *what happened next was he fell* as in (65):[13]

(65) *[what ___ happened next] was [$_{A}$ ~~*it happened*~~ [$_{XP}$ ~~*that*~~ he fell]]

Even for examples of the type (66) there are reasons to believe that there can be no ellipsis derivation, as in (67), though the missing complementiser is independently licensed, as seen in (68):

(66) what he says is he'll leave
(67) (*)what he says is [$_{IP=A}$ ~~he says~~ [$_{CP=XP}$ ∅ he'll leave]]
(68) he says [$_{CP}$ ∅ he'll leave]

In particular, the fact, illustrated in (69), that polarity items are not licensed by negation in the *wh*-CP if the complementiser is not present — reproducing the pattern just discussed for *wh*-CPs with *happen* — shows that a derivation à la (67) is unavailable here, too.[14] The reason why, in spite of the fact that

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[13] Quirk *et al.* (1985:1062n.) mention an interesting example of an SPC featuring a *for-to* infinitival, reproduced here as (ia), noting that the infinitival complementiser can optionally be left out; similarly, (ib) (an example of our own, a case whose corresponding simple sentence features *for* obligatorily).

(i) a. what he didn't like was (*for*) me to be alone at night
b. what he likes best is ?(*for*) her to call often (cf. he likes best *(*for*) her to call often)

Facts like these may suggest that — unlike *that* — *for* can be a target for ellipsis. In this connection, note that, in parallel to examples like *John talked to Mary on Monday and Bill on Tuesday* (cf. Pesetsky 1995), we find coordinations in which *for* is left out in the second conjunct (cf. (ii)).

(ii) John liked very much for her to call often and him to keep silent

While (i) illustrates a case in which a *for* which is obligatory in the corresponding sentence can optionally be left out in the SPC, the converse also seems to exist: a case in which a *for* shows up obligatorily in an SPC which cannot show up in the corresponding simple sentence:

(iii) a. what I cannot believe is *(*for*) him to be top of the class
b. I cannot believe (**for*) him to be top of the class

The fact that (iiia) is ungrammatical without *for* follows straightforwardly from a Type A analysis, as a parallelism effect (cf. section 4.2): the complement of *believe* in the *wh*-clause is nominal (*what*) while the one in the counterweight is clausal (the ECM infinitival); cf. Bošković (1997) for a different account, based on an analysis of SPCs which we believe is false (see the discussion in sections 4 and 5). The fact that (iiia) is acceptable with *for* raises questions which can only be properly addressed once the broader questions that the *for-to* infinitival construction raises in general (e.g. concerning the proper analysis of ECM in these constructions, from the checking perspective of Chomsky 1995); we will put the specific questions raised by (i)-(iii) on reserve for the moment, pending the answers to the more general questions.

[14] *Anyone* in (69a) does not have an NPI-reading; a free choice reading is possible, but this is licensed by the modal in its own clause, hence irrrelevant.

Notice also that a pronoun in the postcopular constituent cannot be bound to a QNP in the *wh*-CP in these cases, *unless* the complementiser is present:

(i) a. what everyone$_j$ says is {*he$_j$/John} will leave
b. what everyone$_j$ says is that he$_j$ will leave
c. what no student$_j$ claims is {*he$_j$/John} can solve this problem
d. what no student$_j$ claims is that he$_j$ can solve this problem

Thus, the examples lacking the complementiser also fail to display a core connectedness effect, QNP-bound variable readings. This fact is significant, since bound variable anaphora is otherwise quite 'liberal' as far as connectedness effects go. It is also surprising, since in an obvious semantic sense, the content of the postcopular IP in (ia,c) is interpreted in the scope of the verb of saying in the *wh*-CP.

the verbs in the *wh*-clause in (66)-(69) license a Ø-complementiser, the a-examples cannot get an ellipsis derivation becomes clear when we realise that in gapping (70) and pseudogapping (71) constructions the Ø-complementiser normally licensed by verbs like *think* and *say* is not licensed when the verb itself is deleted (cf. Wilder 1997):

(69) a. *what John never says is anyone is allowed to leave
b. what John never says is that anyone is allowed to leave
(70) John said (that) Mary would win and Bill ~~said~~ *(that) Sue would win
(71) John said (that) Mary would win, while Bill did ~~say~~ *(that) Sue would win

So we have found a rationale for the ungrammaticality of (43b)/(58). What now remains to be said with respect to (30b), *what happened next is he fell*, is how it *can* be legitimately derived.

3.5 Direct vs indirect answers

What we were forced into concluding is that (30b) is effectively a Type A SPC — but not one involving ellipsis but instead one featuring an *indirect answer* as the counterweight:

(72) what happened next was [he fell] (Type A — 'indirect answer')

This is the only analysis of (30b) that is left to us. After all, a construal of (72) as a Type B SPC with an IP counterweight is unavailable for reasons discussed in section 2.3.2 (Type B SPCs *never* have IP counterweights, since IPs are impossible as subjects); and we just found an explanation for why a Type A *cum* ellipsis-into-CP analysis is illicit as well. Far from manoeuvring us into tight straights, the conclusion that (72) *qua* Type A SPC is the only possible approach to (30b) prompts a discussion — called for anyway — of the parallelism between QAPs and SPCs in the domain of direct *vs* indirect answers.

The ellipsis approach treats specificational pseudoclefts (of Type A) as 'self-answering questions'. The relation between the focus XP and the *wh*-CP is claimed to be the same as that between a (constituent) question and its answer. To maintain this view, it is necessary to show that there are pseudoclefts corresponding to the various types of QAPs. Where the two differ, an account is needed of how and why.

It turns out that the relation between *wh*-CP and XP is more tightly constrained in pseudoclefts than in QAPs. We suggest that this difference should be linked to an intuitively plausible distinction among possible question-answer relations. *Wh*-questions can receive 'direct answers' or a variety of answers of a more or less 'indirect' type; pseudoclefts, on the other hand, usually realise only 'direct' question-answer relations, with a couple of exceptions to the general rule — among which, of course, the example in (30b), now analysed as (72).

Consider (73). *Wh*-questions do not require elliptical answers; the answer can comprise a whole clause. To count as a direct answer, however, a response may differ in content from the question only with respect to material corresponding to the wh-phrase of the question:

(73) what did John buy?
a. John bought [a book]
b. he bought [a book]
c. I believe that John bought [a book]
d. I don't know (what John bought).
e. [Bill]$_F$ bought [a book] (... but I don't know what John bought)

This conjunction of properties is also observed in constructions involving sentence parentheticals (SPs) — the content of the main clause is interpreted in the scope of the verb of the SP, yet bound variable anaphora between the two clauses is not possible:

(ii) a. *Mary will, everyone$_j$ thinks, visit him$_j$
b. *Mary does, nobody$_j$ doubts, like him$_j$

The pronouns in (ii) cannot be construed as bound by the QNP subject of the SP verb.

(73a,b) correspond to direct answers to the question. (73c,d,e) count as indirect answers. (73c) directly answers a slightly different question: 'what do you believe that John bought?' (73d) can be thought of as directly answering the associated yes-no question 'do you know what John bought?', whose positive answer is a felicity condition on the illocutionary act of asking the question in (73). (73e) is only felicitous with a special intonation on the constituent marked F, which signals a change in the discourse topic; see Büring (1995) for a discussion of such 'contrastive topics'.

Well-formed pseudoclefts can be constructed only for (73a,b). Thus there is a tighter relation between the *wh*-CP and the IP in pseudoclefts than governs QAPs. In particular, the 'response' in a pseudocleft requires (semantic) identity of all constituents in A with parallel constituents in the question — except for XP, its focus constituent (corresponding to the *wh*-phrase of the 'question'):

(74) a. [what John bought ___] was [John bought [a book]]
b. [what John bought ___] was [he bought [a book]]
c. *[what John bought ___] was [I believe that John bought [a book]]
d. *[what John bought ___] was [[Bill] bought [a book]] ...
e. *[what John bought ___] was [I don't know ___]

The examples (74a,b) can be thought of as 'undeleted' pseudoclefts; i.e. self-answering questions whose answer is nonelliptical. They instantiate pseudoclefts where the postcopular constituent is an IP (in (74), IP is identical to A, but not identical to XP; rather, IP contains XP). As we pointed out at the start, the existence of IP-pseudoclefts provides one strong argument favouring the approach to Type A pseudoclefts as possibly elliptical self-answering questions.

Even though the SPCs in (74c-e) — corresponding to the perfect QAPs in (73c-e) — are ungrammatical for lack of 'directness', it would be wrong to say that pseudoclefts never instantiate indirect question-answer relations. We have seen that (30b), analysed as in (72), features an 'indirect answer' Type A SPC; and in fn. 6, and (66) and the accompanying discussion in fn. 12, above, we came across other examples of 'indirect answers' Type A SPC. The one from fn. 6 (once again involving the verb *happen*) is reproduced below, along with its QAP companion, in (75):

(66) what he says is he'll leave
(75) a. ?what didn't happen (at least) was {[it didn't rain]/[John didn't leave]}
b. ?what didn't happen (at least)? — {[it didn't rain]/[John didn't leave]}

So what we can conclude is that, under certain conditions, Type A SPCs can mimic QAPs very closely in even allowing for indirect 'answers' (i.e. counterweights not corresponding directly to any constituent of the *wh*-clause). Of course the discussion here begs a big question — the question of under what circumstances a pseudocleft permits an 'indirect answer' as its counterweight. This is a tricky one, which we will have to skirt at this time, for want of any particular insights to offer.

3.6 Conclusion

In this section we have reviewed the restrictions on ellipsis in QAPs and Type A SPCs, *en passant* noting that, to a limited extent, SPCs allow for 'indirect answer' counterweights. Such cases are instantiated by the example that prompted the discussion of conditions on ellipsis — (30b), *what happened next was he fell* — for which no Type B or Type A *cum* ellipsis analyses are available on principled grounds. The fact that Type A SPCs accept (IP) counterweights which do not directly correspond to anything in the *wh*-clause (though they 'answer' the subject of the *wh*-clause, they cannot actually fit in there) enhances the parallelism between these SPCs and QAPs, a connection which we will explore in further detail in the next section.

4 Specificational pseudoclefts and *wh*-questions

4.1 *The wh-constituent is an interrogative CP, not a free relative*

In the foregoing we have seen that there are strong connections between Type A SPCs and Question-Answer pairs. This suggests that the *wh*-constituent of a Type A SPC is a *wh*-interrogative, not a free relative. In this section we will compound arguments to further underpin this claim.[15]

4.1.1 *No wh+*ever *in specificational pseudoclefts*

One immediate indication that a *wh*-interrogative analysis is to be preferred to a free relative approach comes from the fact that the *wh*-constituent of English specificational pseudoclefts resists the addition of *-ever*, which is a convenient diagnostic to distinguish between *wh*-interrogatives and free relatives: undisputed cases of free relatives accept *-ever* but *wh*-interrogatives do not (cf. Iatridou & Varlokosta 1995):

(76)	[what(ever) he is] is immaterial	[FR]
(77)	I wonder [what(*ever) he is]	[*wh*]
(78)	[what(*ever) he is] is proud	[SPC]

For English at least, the facts in (76)-(78) cast doubt on an analysis of the *wh*-clause of a specificational pseudocleft as a free relative.[16]

4.1.2 *Topicalisation across the wh-phrase*

Further such doubt is prompted by the fact (not previously observed in the literature, to our knowledge) that English specificational pseudoclefts pattern with *wh*-interrogatives and differ from free relatives in allowing topicalisation across the *wh*-phrase. Consider the facts in (79)-(81):

(79)	*[to Mary, what he gave] caused a scandal
(80)	?[to Mary, what will he give]?
(81)	?[to Mary, what he won't give] is any wine

The acceptability of the *wh*-interrogative in (80) (observed by Emonds 1976, Pesetsky 1989 and others) is matched by that of the SPC in (81), which differs markedly from the free relative in (79).

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[15] See Hankamer (1974) and Bošković (1997) for additional evidence against a free relative analysis of the *wh*-clause of English specificational pseudoclefts; also note that in the literature on SPCs in American Sign Language a standard claim is that these have the syntax of Question-Answer pairs (but cf. Wilbur 199x for a different view).

[16] Iatridou & Varlokosta (1995) explain the deviance of (78) by appealing to an analysis of all SPCs (not just our Type B) à la Heggie (1988), Heycock (1991), according to which the *wh*-clause is a predicate of the counterweight. The ban on *-ever* in SPCs then follows on the assumption that *-ever* turns the *wh*-clause into a quantificational phrase; as a consequence, the *wh*-clause can no longer act as a predicate (on the assumption that QPs do not qualify as predicates) once *-ever* is added to the *wh*-phrase in SpecCP.

Dayal (1997) claims that FR *-ever* is possible in SPCs in case the main-clause copula is negated, as in:

(i) ?whatever she bought was not *Barriers*

It seems to us, however, that we are not dealing with a specificational pseudocleft in (i). An immediate indication that (i) is not an SPC is the very fact that it features a matrix negation — something which, as Higgins (1979) observed, a genuine SPC can never do in English (cf. **what John is isn't proud of himself*). Moreover, two properties of (i) which would be altogether mysterious if it was an SPC (of Type B) are the fact that that it is irreversible (cf. (ii)) and entirely fails to be embeddable under ECM-verbs taking *to*-infinitival complements (compare (iii) with the appreciably better *?I consider what John is to be important to himself*) . We suggest that what underlies (i) is the construction in (iv), where *whatever she bought* functions as an adjunct topic. From this analysis the irreversibility and unembeddability of (i) follows straightforwardly: movement across topics is impossible, and topicalisation in ECM-infinitivals is excluded.

(ii) **Barriers* was not whatever she bought

(iii) *I consider whatever she bought not to be *Barriers*

(iv) whatever she bought, it was not *Barriers*

Notice also that (81) seems to be a hybrid *wh*-clause, mixing properties of root and embedded questions. Though the *wh*-clause lacks the Subject-Aux inversion effect typical of root questions, it does exhibit the word-order of root *wh*-questions featuring topicalisation when it comes to the relative placement of topic and *wh*-phrase, differing in this regard from embedded *wh*-interrogatives with topicalisation, in which the topic linearly follows the *wh*-phrase, as shown in (82):

(82) a. ?I wonder [what to Mary, he will give]
b. *I wonder [to Mary, what he will give]

The lack of Subject-Aux inversion in (81) indicates that the *wh*-clause is not a root sentence; but the fact that the topic attaches outside the *wh*-phrase suggests — on the assumption that the attachment site of topics in *wh*-questions reveals something crucial about the clause's thematic function (argument or predicate); see Chomsky (1986, 1995) — that the *wh*-clause is not an argument or predicate of the matrix clause either. We will come back to the implications of this in section 5.

4.1.3 Pied-piping

The previous arguments for our claim that the *wh*-clause of an SPC behaves like an interrogative clause, not as a free relative, came from English. In this subsection we will present an interesting argument to the same effect based on the distribution of pied-piping in German and Dutch (cf. also Higgins 1979:41 on what look like similar facts from Spanish).

Let us set the stage for the discussion of Dutch and German to follow by considering pied-piping in English. As (83) shows, English SPCs robustly resist pied-piping. In this regard, the English SPC at first blush seems to pattern with free relatives (cf. (84)), not with *wh*-interrogatives (cf. (85)):

(83) a. *with whom he went to school was with Mary
b. who he went to school with was Mary
(84) a. *with whom he went to school was stupid/has just entered the room
b. who we went to school with was stupid/has just entered the room
(85) a. ?with whom did he go to school?
b. who did he go to school with?

Upon closer inspection, though, the facts in (83)-(85) do not overturn the *wh*-interrogative analysis of the *wh*-constituent of specificational pseudoclefts. For as Kayne (1994:25) points out, while acceptable in more formal registers, *wh*-interrogatives with pied-piping of the type shown in (85a) are not possible in colloquial English. The examples used to support his claim are reproduced here as (86):

(86) a. *we want to know about what you are thinking
b. *tell me at whom you were looking

Coupled with the fact that specificational pseudoclefts are a typical feature of the colloquial language rather than of the more formal registers, this defuses a potential argument against a *wh*-interrogative approach to the *wh*-constituent of SPCs.

So the English pied-piping facts are at least *compatible* with the analysis of SPCs that we are advocating here. But we can do much better than this, by considering the distribution of PP pied-piping in Dutch and German. In these languages, unlike in English, PP pied-piping is not restricted to formal registers in questions; it *is*, however, completely impossible in free relatives (barring possible matching contexts, which are irrelevant). This is shown in (87) and (88):

(87) a. met wie heeft Maria gesproken? [Dutch]
b. mit wem hat Maria gesprochen? [German]
with whom has Maria spoken
(88) a. *met wie Maria gesproken had kwam zojuist de kamer binnen [Dutch]

b. *mit wem Maria gesprochen hatte kam gerade ins Zimmer hinein [German]
with whom Maria spoken had came just (into) the room inside

Interestingly, now, specificational pseudoclefts featuring PP pied-piping are grammatical in both Dutch and German, as shown in (89):

(89) a. met wie Maria gesproken had was met Peter [Dutch]
b. mit wem Maria gesprochen hatte war mit Peter [German]
with whom Maria spoken had was with Peter

So again we see that the *wh*-constituent of SPCs behaves like a *wh*-clause, not like a free relative.

4.1.4 Multiplicity

A spectacular set of facts underscoring the same point involves multiple *wh* SPCs. Consider the examples in (90) (from Ross 1997) and (91) (from Meinunger 1997):

(90) [who ordered what] was [Tom (ordered) a beer and Jim a watermelon flip]
(91) a. [wer hier wem geholfen hat] war [die Hilde dem Heinz] [German]
who here whom helped has was the Hilde the Heinz
b. *wer hier wem geholfen hat scheint die Hilde dem Heinz zu sein
who here whom helped has seems the Hilde the Heinz to be
c. *die Hilde dem Heinz war wer hier wem geholfen hat
the Hilde the Heinz was who here whom helped has

These SPCs, which — as the deviance of the examples in (91b,c) shows — are unequivocally of Type A, further the cause of the *wh*-interrogative approach to the *wh*-clause of SPCs. After all, the alternative free relative approach here has to contend with the fact that neither in English nor in German do we otherwise come across cases of multiple relativisation, while multiple *wh*-questions are perfectly common in these languages.

4.1.5 Case connectedness

German furnishes a fifth argument for an analysis of the *wh*-constituent of SPCs as *wh*-interrogatives, coming from the domain of case. In German an object *wh*-question such as (92a) is answered as in (92b), with an accusative-marked DP, not as in (92c); a predicate *wh*-question such as (93a), by contrast, can only receive a nominative-marked answer.

(92) a. was hat er schon immer kaufen wollen?
what has he PRT always buy want
'what has he always wanted to buy?'
b. einen Audi
a-ACC Audi [make of car]
c. *ein Audi
a (NOM) Audi
(93) a. was ist er?
what is he
'what is he?'
b. ein Arzt
a (NOM) doctor
c. *einen Arzt
a-ACC doctor

The interest of this for the discussion of SPCs lies in the fact that a pseudocleft like (94) can feature an accusative-marked counterweight alongside a nominative one, while (95) can only get nominative marking on the counterweight:[17]

(94) was er schon immer kaufen wollte, ist ein/einen Audi
(95) was er ist, ist ein Arzt/*einen Arzt

Moreover, while the nominative variant of (94) allows for inversion, embedding under the raising verb *scheinen*, or the addition of modal auxiliaries to the matrix clause, the accusative one does not, as seen in (96):

(96) a. was er schon immer kaufen wollte scheint ein Audi/*einen Audi zu sein
what he PRT always buy wanted seems a(NOM)/*a-ACC Audi to be
b. was er schon immer kaufen wollte hätte ein Audi/*einen Audi sein können
what he PRT always buy wanted would-have a(NOM)/*a-ACC Audi be can
c. ein/*einen Audi ist was er schon immer kaufen wollte
a(NOM)/*a-ACC Audi is what he PRT always buy wanted

By contrast, it is precisely the accusative contender that wins out in SPCs involving NPI connectivity, as shown in (97) (intuitions on (97) are less robust than they are on (96)):

(97) a. ?was er niemals kaufen würde ist [auch nur irgendeinen japanischen Wagen]
what he never buy would is also only any-ACC Japanese car
b. *was er niemals kaufen würde ist [auch nur irgendein japanischer Wagen]
what he never buy would is also only any(NOM) Japanese car

This said, the account of 'case connectedness' falls readily into place: the accusative variants of the pseudocleft examples presented above are are all Type A SPCs, hence they are grammatical on the *wh*<XP order only, and they resist embedding under raising verbs or addition of modal auxiliaries (like all Type A SPCs); by contrast, it is exactly these accusative variants that, by virtue of their Type A status, cater for the licensing of NPIs in the counterweight. The 'undeleted' source for the accusative variant of (94) thus reads as in (98), which is in effect grammatical in German (cf. Weinert 1995 for attested examples):

(98) was er schon immer kaufen wollte ist er wollte einen Audi kaufen

For the QAP in (92) an essentially similar story presents itself, the example in (90b) involving an elliptical full-IP answer, and the alternative in (92c) being ungrammatical because, apparently, questions always receive a clausal answer (in German at least). And of course no accusative case will ever be made available for the answer in (93c) or the counterweight in (93) since, unlike in the case of (92) and (94), there is simply no verb in the elliptical IP here which can assign this case to the DPs involved.

So there is a perfect match between (the Type A versions of) the SPCs in (94) and (95) and the QAPs in (92) and (93). And moreover, there is a contrast here between SPCs and relative clause

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[17] Iatridou & Varlokosta (1995) argue that the two variants of (92) differ in interpretation — the nominative variant is a predicational pseudocleft while the accusative one is an SPC. It can be shown, however, that (94) with a nominative counterweight *can* be specificational (see the BT-A and QP/bound-vbl. connectivity effects in (i) and (ii); cf. also Sharvit 1997 on superficially similar cases from Hebrew), but that, whenever it is, it can only be of Type B (see below, main text); the accusative variant of (92) is a Type A SPC.

(i) was *er* schon immer lesen wollte ist ein Artikel über *sich*
what he PRT always read wanted is a(NOM) article about REFL
(ii) was *niemand* lesen will ist *sein* erster Artikel
what nobody read wants is his(NOM) first article

constructions. For as (99) shows, relative constructions do not exhibit 'case connectedness' of the sort found in (92) and (94).[18]

(99) das, was er schon immer kaufen wollte, ist ein/*einen Audi
that which he PRT always buy wanted is a(NOM)/*a-ACC Audi

The Case connectedness effects reviewed in this section confirm not just the correlation between QAPs and Type A SPCs but also the ellipsis approach to the latter — both central tenets of the approach to SPCs taken in this paper.[19]

4.1.6 Participial connectedness

There is another type of connectivity effect in SPCs and QAPs — one rarely discussed in the literature (or at least not in terms of 'connectivity') — emanating from an interesting observation made with respect to SPCs in Quirk *et al.* (1985:1388; we have adapted their examples slightly, to

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[18] Things highly similar to those reported for German in this subsection are true for Russian pseudoclefts (which are structured in the following way: *wh*-clause – *tak eto* ('then this-is') – counterweight). If the *wh*-constituent does not originate in a subject position, nominative or instrumental (which is also found in ordinary copular sentences) is impossible. The counterweight must show the same case as the *wh*-constituent:

(i) cto on vypil tak eto vodku / *vodkoj / *vodka (Izvorski 1997)
what he has-drunk 'tak eto' vodka-ACC / vodka-INST / vodka-NOM
'what he drank was (the) vodka'

'Undeletion' is possible:

(ii) cto on vypil tak eto on vypil vodku

And although Russian is very liberal when it comes to word order, reversing the *wh*-clause and the counterweight is impossible in these pseudoclefts:

(iii) *vodku tak eto cto on vypil

[19] Apparent breakdown of Case connectedness is found in the following examples of SPCs and QAPs, due to Sharvit (1997) (italicisation marks intended variable binding). In (i)-(vi), we are concerned with the reading in which the pronominal is understood as being bound by the italicised QNP in the whCP.

(i) who does *every professor* think *t* should get tenure? — *himself/*him/*he*

(ii) who *every professor* thinks *t* should get tenure is *himself/*him/*he*

These cases pose two problems: besides the Case form of the answer/counterweight (accusative rather than the expected nominative), the fact that it can only be an anaphor, not a pronoun (not, at least, if it is to be bound by *every professor*), also seems surprising, in the light of the fact that in the 'corresponding' simple sentence in (iii) only *he* is possible:

(iii) *every professor* thinks *he* should get tenure

There is evidence, however, to indicate that the form that surfaces in (i)-(ii) is in fact the *emphatic reflexive*, as in (iv); as is well known, the emphatic reflexive of English surfaces in the accusative Case form only (**he heself*), hence the facts in (i)-(ii) are less dramatic than they seem at first blush.

(iv) *every professor* thinks that *he himself* should get tenure

The evidence that we are dealing with emphatic reflexives in (i)-(ii) is twofold. First, in German (v), the reflexive anaphor *sich* is impossible; the only option in this context is the nominative pronoun *er* accompanied by the emphatic reflexive particle *selbst*. Secondly, Sharvit herself notes an example provided to her by A. Kroch that indicates that reflexive and pronominal elements used in elliptical responses are governed by the Binding Theory in a manner consistent with the ellipsis theory (but irreconcilable with her own, semantic approach) — see (via), where the deviance of the reflexive can be attributed to the fact that emphatic reflexives are subject to the Specified Subject Condition, as confirmed by (vib).

(v) a. wer denkt *jeder Professor t* soll eine unbefristete Stelle bekommen?
who thinks every professor should a tenured position get

b. **sich/*ihn/??er/er selbst*
refl/he(acc)/he(nom)/he(nom)+emph.refl

(vi) a. ?who *every professor* likes [Mary's picture of *t*] is *him/*himself*

b. *every professor* likes [Mary's picture of *him/*himself/*him himself*]

As for the impossibility of the *nominative* pronoun in the English examples in (i)-(ii), it suffices to note that it can never be used in isolation; cf. Cardinaletti & Starke (1994), and the contrast in (vii):

(vii) a. who came? — John (did)

b. who came? — he *(did)

make the point clearer). They point out that both (100a) and (100b) are grammatical as counterweights of the *wh*-clause in (100). To this observation we add that (100c) is ungrammatical, and that while the 'perfect match' full-IP counterweight in (100e) is impeccable, the imperfective full-IP counterweight in (100d) is marginal at best. These observations can be duplicated for QAPs, as shown in (101). Of course, this is what our approach to (Type A) SPCs and QAPs leads us to expect.

(100) what he has done is
- a. [taken some pictures]
- b. [take some pictures]
- c. *[took some pictures]
- d. ?[he took some pictures]
- e. [he has taken some pictures]

(101) what has he done?
- a. [taken some pictures]
- b. ?[take some pictures]
- c. *[took some pictures]
- d. (?)[he took some pictures]
- e. [he has taken some pictures]

And note that, for both SPCs and QAPs alike, no past participle can be found in the counterweight or answer when the *wh*-clause is imperfective, as shown in (102) and (103):

(102) what he did was
- a. *[taken some pictures]
- b [take some pictures]
- c. *[took some pictures]
- d. [he took some pictures]
- e. ??[he has taken some pictures]

(103) what did he do?
- a. *[taken some pictures]
- b. [take some pictures]
- c. *[took some pictures]
- d. [he took some pictures]
- e. ?[he has taken some pictures]

The ungrammaticality of the c-examples in the above was discussed in section 3 in connection with maximal ellipsis; but the other examples, when taken together, raise a novel point, which we will briefly comment upon in the context of the ellipsis approach to SPCs and QAPs.

Taken at face value, it would seem that, of the a- and b-examples in (100) and (101), the former are straightforward cases of Type A SPCs/QAPs, with the participle in the counterweight/ answer licensed under ellipsis, while the b-cases, exhibiting no participial connectivity, instantiate Type B. But what flies in the face of such a classification of the facts is that the a- and b-examples in (100) each allow inversion and NPI licensing — particularly the fact that, as (104) and (105) show, inversion and NPI licensing seem just as acceptable in the a-examples of (104) and (105) as they are in the corresponding b-examples indicates, from the perspective we have developed on the analysis of SPCs, that neither the a-case nor the b-case instantiates Type A.

(104) a. [taken some pictures] is what he has done
- b. [take some pictures] is what he has done

(105) a. what he has not done is [taken any pictures]
- b. what he has not done is [take any pictures]

So a squish between ellipsis and non-ellipsis (Type A and Type B) is not what we are dealing with. Instead, to get the optional participial connectivity effect under control, what we will capitalise on is the alternation between (106a) and (106b) (the latter noted in Emonds 1976):

(106) a. John said that he would take some pictures, and [taken some pictures], he has
- b. John said that he would take some pictures, and [take some pictures], he has

The pair in (106) shows that, when detached from the auxiliary of the perfect, the main verb phrase can show up in either of two morphological forms — a participial or a plain infinitival form. This of course reminds us of the alternation between (100/101a) and (100/101b), a link which is enhanced further by the fact that, at least in British English, the auxiliary of the perfect in (106) can be followed by *done*, which also surfaces in the *wh*-clause of the SPCs in (100) and the QAPs in (101):

(107) a. John said that he would take some pictures, and [taken some pictures], he has done

b. John said that he would take some pictures, and [take some pictures], he has done

A movement approach to VP topicalisation would confront us with what looks like an insurmountable problem: how to account for the non-occurrence of participial morphology on the clause-initial VP in the b-examples in (106) and (107)? These examples thus suggest that VP topicalisation involves base-generation, the initial VP never actually being in the complement of the participle at any point in the derivation, and linked instead to a *pro*-VP which in (106) is null and in (107) gets morphologically realised as *done*. The connection between the VP-topic and the *pro*-VP proxy is apparently allowed to be lax — while the pro-VP must be participial, the VP-topic does not have to agree with it in features.[20]

(108) [take(n) some pictures], he has {*pro*-VP/done}

This said, the examples of SPCs and QAPs with participial connectedness are straightforwardly compatible with a non-ellipsis approach to these examples; it is actually the b-examples which are of greater interest, since it is these which, when coupled with the VP topicalisation cases, present an argument against the syntactic reconstruction approaches to SPCs mentioned in the introduction (Heycock & Kroch 1996, Bošković 1997) — for these approaches the lack of participial morphology on the counterweight in the example in (100b) seems very difficult to accommodate.

4.1.7 On the breadth of the generalisation

Of the arguments against a free relative analysis of the *wh*-constituent of specificational pseudoclefts, and in favour of a link between SPCs and QAPs, that we reviewed in the preceding subsections, four involve irreversible and unembeddable SPCs (cf. (109)-(110), below, and also (91), and (96), above) — hence the topicalisation, multiplicity, pied-piping and case connectedness arguments strictly speaking apply to our Type A SPCs only.

(109) a. *this wine is [to Mary, what he will/won't give]
b. *I'd call [to Mary, what he will/won't give] this/any wine

(110) a. *met Peter was met wie hij gesproken had [Dutch]
b. *mit Peter war mit wem er gesprochen hatte [German]
with Peter was with whom he spoken had

Though our conclusion that the *wh*-clause of SPCs is not a free relative thus holds firmly in the case of Type A constructions, one might wonder whether a free relative approach to Type B SPCs could still be viable. As a matter of fact, for languages like Bulgarian, Greek and Hebrew, a case has been made in the literature that the *wh*-constituent of their SPCs really is a free relative.

Evidence to this effect comes, among other things, from the morphological make-up of the *wh*-forms opening the *wh*-constituent of SPCs in these languages. In Bulgarian and Greek, the *wh*-pronoun heading a free relative obligatorily has a definite determiner affixed to it (e.g. Bulgarian *koj-to* and Greek *o-pjos* 'who+DEF'), while the *wh*-pronoun of questions does not; it is the former, affixed form of the *wh*-pronoun that shows up in Bulgarian and Greek SPCs:

(111) kakvo-*to* kaza bese ce Maria e umna [Bulgarian; Izvorski (1997)]
what-DEF said was that Maria is smart
'what he said was that Maria is smart'

Notice that SPCs of the sort in (111) can be of Type B. In fact, it seems that in the languages for which evidence has been presented to the effect that the *wh*-clause of the SPC is a free relative,

[20] Notice that the *done* found in the examples in (107) is an instance of main-verb *do*; as such it introduces questions of a type similar to the ones we posed in fn. 7, above. It will be useful, in future research, to consider these questions in tandem. We have not conducted a detailed investigation at this time.

Type B is the *only* type of SPC. As Anastasia Giannakidou (p.c.) has pointed out to us, Greek SPCs exhibit a cluster of properties which conspires to the conclusion that Type A SPCs are absent from this language: Greek SPCs (i) do not license any NPIs in the 'counterweight'; (ii) do not allow 'undeleted', full-IP counterweights (only *na*-clauses being possible, these being larger than IP, possibly as large as CP); and (iii) feature *wh*-clauses which unambiguously qualify as free relatives, Far from defeating our conclusion that in a well-defined class of cases the *wh*-clause of SPCs exhibits the behaviour of a *wh*-interrogative rather than that of a free relative, this particular clustering of properties peculiar to Greek SPCs (and presumably shared with their counterparts in Bulgarian and Hebrew) confirms once again the distinction that should be made between SPCs of Type A and Type B.

In particular, while the links with the *wh*-clauses of Question-Answer pairs that we have drawn attention to hold for unequivocal Type A SPCs, an analysis of the *wh*-clause as a free relative seems plausible for the case of Type B SPCs, not just in the light of the Bulgarian, Greek and Hebrew facts but also in view of the analysis of Type B SPCs that we were led to at the end of section 2 of this paper, repeated below.

(42) [SC [Subject counterweight] [Predicate *wh*-clause]] [Type B SPCs]

In this small clause structure, the *wh*-constituent functions as the predicate of the counterweight. Now, while free relatives make perfect predicates, *wh*-questions typically do not. There is reason to believe, therefore, that Type A and Type B SPCs differ with respect to the way they analyse the *wh*-clause: as a *wh*-interrogative in the former case, and as a free relative in the latter.[21] [22]

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[21] A potentially serious objection to our claim that the *wh*-clause of Type A SPCs is a *wh*-interrogative, not a relative clause construction of sorts, comes from the fact that many SPCs with *what* can be paraphrased with constructions featuring headed relatives. And what is particularly interesting is that these headed relative constructions can even preserve the NPI connectivity effects of their *wh*-counterparts. To see this, consider the examples in (i), which are both fine in elliptical as well as 'undeleted' form:

(i) a. what John didn't do was [~~he didn't~~ buy any linguistics book]
b. the (one/only) thing John didn't do was [~~he didn't~~ buy any linguistics book]

One thing is clear: headed relatives do not serve as questions; they are unanswerable. Nonetheless, they do show up in 'echoes' introducing an answer to a question like (iia), as seen in (iib):

(ii) a. A: what is the (one/only) thing John didn't do?
b. B: the (one/only) thing John didn't do? — buy any linguistics books

What this suggests is that, even though these relatives do not look like questions, they can be underlyingly represented as (non-root) *wh*-interrogatives à la *what the (one/only) thing that John didn't do is*. There is some evidence to suggest that relatives like these can indeed be embedded in an elliptical *wh*-question of this sort: the emergence of spurious *is* in examples like (iii) (discussed in January 1992 on *Linguist List*; constructions like these are found in regions throughout the United States, but to British English speakers they sound very awkward; we have found them attested in spontaneous speech in Dutch as well):

(iii) a. the reason <u>is is</u> we have no handle on this construction
b. all it is saying <u>is is</u> that you are being paid out of the grant [attested sentence]
c. the (one/only) thing John does to linguistics books <u>is is</u> burn them

Of the two tokens of *is* in (iii) one is apparently spurious; but this is merely apparent if we look upon the first of the two *is*-es as the lexicalisation of the copular head of the elliptical *wh*-interrogative which *reason/all/thing* is the predicate. (Note that, except in echoes like (iib), headed relatives do not suffice as root *wh*-questions; thus, eliding the copula *is* seems possible only when it does not find itself in Comp.)

Apart from the NPI effects, constructions of the type in (ib) also share with Type A SPCs their peculiar restrictions on auxiliaries in the root clause:

(iv) a. the (one/only) thing John may have claimed was that she had given you the book
b. *the (one/only) thing John claimed may have been that she had given you the book
(v) a. what John may have claimed was that she had given you the book
b. *what John claimed may have been that she had given you the book

In both these regards, relatives with *contentful* heads (i.e. heads other than dummy's like *thing* and *all*) exhibit parallel behaviour as well (cf. Higgins 1973:343 on the auxiliary cases):

(vi) the only claim that John didn't make was that she had given you any books
(vii) a. the only claim that John may have made was that she had given you the book
b. *the only claim that John made may have been that she had given you the book

4.2 *The link with Question-Answer pairs: Parallelism effects*

Our arguments to the effect that the *wh*-constituent of a Type A SPC has the syntax of a question establish a connection between SPCs and QAPs, as we pointed out earlier on. Not only can this link be profitably exploited in the discussion of ellipsis and the conditions thereon, as we showed in section 3, it also allows us to make sense of some of the most mysterious quirks of SPCs, all involving some sort of PARALLELISM EFFECT between the *wh*-clause and the counterweight/answer. In this section we will compound a variety of facts underscoring the role of parallelism.

4.2.1 *Multiple wh-constructions*

Several popular approaches to SPCs 'recreate' a simple sentence LF structure out of the surface SPC, via a variety of operations that we need not be concerned with in this context (see e.g. Heycock & Kroch 1996 and Bošković 1997, and references cited there). For all accounts of SPCs that assume that their LF is that of a simple clause, a question that arises is why multiple embedded questions such as (112), which are well formed as simple, non-cleft clauses, do not have a specificational pseudocleft counterpart (the deviance of (113) is absolute, i.e. it cannot be attributed to a wh-island violation incurred by movement of *what* as in *??what did John wonder who read?* and *??what John wondered who read was the Bible*):

(112) John wondered who read a book by which linguist
(113) *what John wondered who read was [a book by which linguist]

The deviance of (113), while mysterious from the perspective of 'simple clause LF' approaches to SPCs, is readily expected on the approach to SCPs taken here: it is of a kind with the ungrammaticality of the full-IP SPC in (114) and the infelicitousness of the QAPs in (115):

(114) *what John wondered who read was
[he wondered who read a book by which linguist]
(115) a. what did John wonder who read? — *a book by which linguist
b. what did John wonder who read? — *he wondered who read a book by which linguist

---

Our suggestion that headed relatives can occur in elliptical (non-root) *wh*-interrogatives and serve as the *wh*-clause of SPCs in this fashion readily carries over to the examples in (vi)-(vii). Constructions such as the ones in (ib), (iv) and (vi)-(vii) are seriously problematic for an approach to SPCs à la Bošković (1997), according to which the counterweight is moved into the *wh*-clause at LF to replace the 'surface anaphor' *what* in examples like (va) — since in (ib), (iv) and (vi)-(vii) there seem to be no 'surface anaphors' involved, it is unclear what the counterweight could possibly replace at LF in these examples.

Sharvit (1997) rejects a parallel treatment of 'run-of-the-mill' SPCs and cases like (ib), on account of the observation that the 'pseudo-pseudocleft' in (viiib) is ungrammatical:

(viii) a. what John didn't buy was any linguistics book
b. *the (one/only) thing that John didn't buy was any linguistics book

The fact that (ib) is grammatical suggests, however, that failure to license an NPI in the counterweight is not a systematic property of the 'pseudo-pseudocleft'. What appears to be wrong with the example in (viiib), in comparison with (ib), is that *the (one/only) thing* in the former two examples functions as an argument of the verb heading the relative clause, while in (ib) *thing* corresponds to a predicate (the VP *buy any linguistics book*) in the counterweight. We can try to rationalise this restriction on the distribution of *the (one/only) thing* type 'pseudo-pseudoclefts' as a parallelism effect: on the (admittedly *ad hoc*) assumption that *the (one/only) thing* in 'pseudo-pseudoclefts' can only be a predicate inside the relative clause, and that there must be matching across the copula with respect to predicativity (cf. section 4.2.8, below), the ungrammaticality of (viiib) may follow.

[22] The observation (see section 4.1.1) that English SPCs never allow the addition of *-ever*, which is a hallmark of free relatives, does not contradict the claim that the *wh*-clause of Type B SPCs is a free relative even in English, if it is assumed (as in Iatridou & Varlokosta 1995) that the addition of *-ever* makes it impossible for the free relative to function as a predicate — all and only those FRs that can be predicates can figure in Type B SPCs, given the analysis in (42).

The obvious reason why the examples in (114) do not work is that one cannot answer a *wh*-question with a *wh*-answer of this type. And since our approach to SPCs likens them to QAPs, it does not come as a surprise that the examples in (113) and (114) are parallel to those in (115).

The previous examples involved ungrammatical SPCs which, when 'reduced' to simple clauses at LF via some sort of (post)syntactic operation (à la Heycock & Kroch 1996 or Bošković 1997), would correspond to grammatical multiple *wh*-constructions — making a case against syntactic reconstruction approaches of these types. It is worth reminding the reader, at the end of this subsection, that the deviance of the examples discussed here cannot possibly be blamed on some general problem with multiple *wh*'s in SPCs. For recall that, as we noted in section 4.1.4, one does in fact come across multiple *wh*-SPCs.

4.2.2 *Special NPIs (I):* not ... until

A strong current in our approach to SPCs is the fact that Type A SPCs exhibit NPI connectivity. Section 2 presented a variety of cases in which an NPI in the counterweight is licensed by what seems to be a constituent of the *wh*-clause, something which turns out to be illusory on the account we have developed, in which the NPI is in effect licensed entirely within the counterweight, by a negation that is part of the elided material. But it turns out that not just *any* NPI in the counterweight can be so licensed. One conspicuous exception is formed by *not ... until*, as seen in (116a) (cf. Clifton 1969, Higgins 1979:45, Sternefeld 1997). While we do not profess to have an account of this surprising breakdown of NPI connectivity, we would like to draw attention to the fact that (116a) behaves just like the QAP in (116b) in this regard:

(116) a. *what John didn't do was leave until 6pm (cf. John didn't leave until 6pm)
b. what didn't John do? — *leave until 6pm

That we are really dealing with a property of QAPs, not with a restriction on NPI licensing of sorts, is shown by the fact that the examples in (116) do not improve at all when the elliptical counterweight/answer is replaced with its full-IP counterpart, as in (117):

(117) a. *what John didn't do was [he didn't leave until 6pm]
b. what didn't John do? — *he didn't leave until 6pm

4.2.3 *Special NPIs (II): negatively polar idiom chunks*

Similar observations can be made with regard to the licensing of negatively polar idiom chunks in SPCs and QAPs. Consider the following examples:

(118) a. *what John didn't have was a red cent (cf. John didn't have a red cent)
b. what didn't John have? — *a red cent

Once again, the 'covertness' of the NPI licensor in these elliptical examples does not seem to matter, for 'undeleting' the counterweight/answer, as in (119), does not lead to a significant improvement:[23]

(119) a. *what John didn't have was [he didn't have a red cent]
b. what didn't John have? — *he didn't have a red cent

4.2.4 *Idiom chunks in general*

Idiom chunks lead to crashes even when there is no NPI licensing involved. That is, both SPCs and QAPs with idioms split between *wh*-clause and counterweight/answer are no good:

[23] The examples in (119), to the extent that they are acceptable at all, have the effect of a (linguistic) joke — the effect typically procured by a *zeugma*. At best, then, (119) might work as an *indirect answer* construction; see the discussion at the end of section 3 on the limited availability of 'indirect answer' counterweights in SPCs.

(120) a. what John took was a picture [not idiomatic]
b. what did John take? — a picture [not idiomatic]

While grammatical, the examples in (120) both lack an idiomatic interpretation for *take a picture* (i.e. 'photograph'). And even here, the full-IP alternatives fail to procure an idiomatic reading as well:

(121) a. what John took was [he took a picture] [not idiomatic]
b. what did John take? — he took a picture [not idiomatic]

It seems as though the *wh*-clause is a 'wrong-footer': the verb in the *wh*-clause is not interpretable idiomatically; a parallelism constraint on the *content* of the *wh*-clause and the counterweight/answer seems responsible for the unavailability of an idiomatic reading throughout.[24]

4.2.5 Multiple quantifiers and (lack of) scope ambiguities

Parallelism, or rather, the lack thereof, also gives us the key to an account of the fact (noted in Williams 1994:62) that, even though the simple sentence in (122) is scopally ambiguous, the corresponding (elliptical and 'undeleted') SPC in (123) does not allow the quantifier in the counterweight to scope over the QP in the *wh*-clause.

(122) every article that appeared bothered a friend of mine
(123) what bothered a friend of mine was [every article that appeared ~~bothered a friend of mine~~]

Here again, QAPs are similar to SPCs, as the lack of scope ambiguity for the example in (124) shows:

(124) what bothered a friend of yours? — [every article that appeared ~~bothered a friend of mine~~]

The cause of the unavailability of the wide-scope readings for the universal quantifiers in (123) and (124) is straightforward: since in the *wh*-clause there can be no scopal ambiguity, parallelism ensures that there cannot be any in the counterweight/answer either.

4.2.6 Negative Raising

Similar such parallelism constraints rear their heads in a closely related domain as well: Negative Raising. Consider the following ill-formed SPCs (cf. Higgins 1979; also discussed in Bošković 1997):

(125) John does not believe that she will graduate
a. = John does not hold the belief that she will graduate
b. = John holds the belief that she will not graduate
(126) what John does not believe is that she will graduate
a. = John does not hold the belief that she will graduate
b. ≠ John holds the belief that she will not graduate

While (125) is ambiguous between a reading in which negation scopes over the matrix clause and one in which it confines its scope to the embedded clause (the latter being a case of Neg Raising), in the SPC in (126) only the matrix reading for the negation is available. Notice that the SPC in (126) shares

[24] Here as in (119) the SPCs and QAPs might work as *zeugmas* — i.e., cases in which there is *form* identity of question and answer but no *content* (or LF) identity. The LF-identity constraint can be flouted (not just in QAPs and SPCs but in coordinations as well), with the result of the typical effects of *zeugma*.

this interpretive property with both the full-IP Type A SPC in (127) and the QAP in (128), thereby once again confirming the link between SPCs and QAPs.

(127) what John does not believe is [John does not believe that she will graduate]
a. = John does not hold the belief that she will graduate
b. ≠ John holds the belief that she will not graduate
(128) what does John not believe? — that she will graduate
a. = John does not hold the belief that she will graduate
b. ≠ John holds the belief that she will not graduate

We can understand the unavailability of the Neg Raising reading in (126)-(128) as a reflex of a parallelism requirement on the *wh*-clause and the counterweight — since in the *wh*-clause of (126)-(128) the negation has no choice but to take matrix scope, it must take matrix scope in the counterweight/answer as well.

4.2.7 Argument structure

Parallelism also gives us a handle on the ungrammaticality of SPCs of the type in (129), discussed in Bošković (1997):

(129) a. *what John gave was Mary a book
b. *what John gave was a book to Mary

Bošković proposes to analyse the ungrammaticality of these examples with an appeal to a breakdown of connectivity for the head trace present in the bracketed parts of the examples — on a Larsonian approach to the structure of triadic constructions (Larson 1988), these bracketed constituents would be VPs with a V-trace as their head. We believe that an analysis of (129) along such lines is not worth pursuing, in view of the fact that even the full-IP counterparts of (129), given in (130), as well as the QAPs corresponding to (129), shown in (131), are ungrammatical.

(130) a. *what John gave was [John gave Mary a book]
b. *what John gave was [John gave a book to Mary]
(131) a. what did John give? — *Mary a book
b. what did John give? — *a book to Mary

The problem with all these examples seems to be lack of parallelism between the *wh*-clause and the counterweight/answer: the counterweight/answer 'harks back to' a *wh*-clause with triadic *give*, but the *wh*-clause features dyadic *give* (the beneficiary being unrealised). Notice that the counterweight in (129b) and the answer in (131b) are actually fine in multiple *wh* SPCs/QAPs (see 4.1.4 on these): *what John gave to whom was a book to Mary* and *what did John give to whom? — a book to Mary*. This further supports our perspective, and gives an additional indication that Bošković is not on the right track when it comes to explaining the ungrammaticality of (129).

4.2.8 Predicativity

There is evidence that the *wh*-clause and the counterweight/answer in SPCs and QAPs must match with respect to the nature of predicates as well. To see this, consider the following examples. In (132) we present a copular predication which is ambiguous in principle between a stage-level/existential interpretation (paraphrased in (132a)) and an individual-level/generic reading (given in (132b)):

(132) a fireman is available

a. = there is a fireman available
b. = a fireman has the intrinsic (IL) property of being available

Interestingly, now, the SPC counterpart of (132), presented in (133), is unambiguous — only the b-reading survives:

(133) what a fireman is is available
a. ≠ there is a fireman available
b. = a fireman has the intrinsic (IL) property of being available

That this is not a peculiar property of SPCs only is shown by the fact that QAPs behave the same way. The question in (134) can only be answered by mentioning some intrinsic (IL) property which the replier considers a fireman to possess. We believe that this is due to the fact that the question itself features an IL predication: *what*, the question word, is a *nominal* predicate (*contra* Jacobson 1995, Sharvit 1997 and others, who claim that the *what* of SPCs is a cross-categorial element); nominal predicates are IL predicates (cf. Kratzer 1989). The answer must parallel the question with respect to the IL/SL distinction; if it does not, the result is infelicitous. And what is true for QAPs is true for SPCs as well.

(134) what is a fireman?

4.2.9 Particle placement

Now that we have touched upon the behaviour of predicates in SPCs and QAPs, it is but a small step to considering the placement of one particular type of secondary predicate, the verbal particle (cf. Den Dikken 1995a and references cited there for detailed discussion of its status as a predicate), in relation to the verb and the object.

As the examples in (135) and (136) show, there is a strong tendency for a particle to be placed on the same side of the object in the *wh*-clause and the counterweight; whenever particle placement in the two major constituents of an SPC varies, a degradation results.[25]

(135) a. who looked the words up was [John looked the words up]
b. ??who looked the words up was [John looked up the words]
c. ??who looked up the words was [John looked the words up]
(136) a. ?where he looked the words up was [he looked the words up in Webster's]
b. *where he looked the words up was [he looked up the words in Webster's]
c. *where he looked up the words was [he looked the words up in Webster's]

As before, the facts of Type A SPCs find a parallel in the domain of QAPs:

(137) a. who looked the words up? — [John looked the words up]
b. ??who looked the words up? — [John looked up thewords]
c. ??who looked up thewords? — [John looked the words up]
(138) a. where did he look the words up? — [he looked the words up in Webster's]
b. ??where did he look the words up? — [he looked up the words in Webster's]
c. ??where did he look up thewords? — [he looked the words up in Webster's]

By now the reader will be able to guess what is at issue here — the facts in (135)-(138) show that the *wh*-clause and the counterweight/answer have to be parallel. this time with respect to the question of

[25] (136a) is not perfect to begin with; speakers of English are usually not very comfortable with SPCs whose *wh*-clause features a *wh*-word other than *what* or *who*, for reasons which are immaterial (i.e., it does not differentiate in any direct way between the various approaches to SPCs taken in the literature; in particular, it does not favour an analysis of the *wh*-constituent of SPCs as a free relative, since free relatives with *where*, *how* and *why* are fine: *where he lives is a nice place, how/why he did it is a mystery to me*).

whether Verb-Particle Reanalysis (abstract incorporation; cf. Den Dikken 1995a) takes place or not: applying reanalysis in the *wh*-clause (and thereby deriving an 'inner particle' construction with V-Prt-Object order) is legitimate iff it is also applied in the counterweight/answer.

This said, now consider the following data, taken from Kayne (1998:26):

(139) a. what he looked up was [he looked up a linguistics term]
b. ??what he looked up was [he looked a linguistics term up]
(140) a. what is he looking up? — [he's looking up a linguistics term]
b. ?what is he looking up? — [he's looking a linguistics term up]

Once again we find a link between the Type A SPCs in (139) and the QAPs in (140), which confirms the analytical connection we have drawn between the two. The fact that the particle cannot comfortably surface in the outer position in these examples suggests, on the analogy of what we found for (135)-(138), that Verb-Particle Reanalysis takes place in the *wh*-clause in these examples — and *must* take place here. This can be thought of as a reflex of the overt-syntactic extraction of the object in these sentences. On the assumption that extraction of the object in a V-Prt construction is contingent on reanalysis of verb and particle, the facts in (139) and (140) are entirely on a par with those found in the c-examples in (135)-(138).

Verb-particle reanalysis thus presents yet another case in which *wh*-clause and counterweight/answer in SPCs and QAPs have to respect parallelism.[26] One last case of parallelism that we want to address in this section — even though it presents no further evidence for the link between SPCs and QAPs — concerns the distribution of so-called emotive *should.*

4.2.10 Emotive should *connectivity*

Higgins (1979), and Heycock & Kroch (1996) and Bošković (1997) in his wake, notice that the distribution of emotive *should* — a form of *should* licensed by certain 'emotive' predicates in the upstairs clause — shows what looks at first like a surprising pattern in SPCs. To set the stage for the SPC examples, consider first the simple case of emotive *should* in (141a):

(141) a. it is unfortunate that he should be proud of himself
b. it is apparent/clear that he {is/*should be} proud of himself

Here the presence of *should* in the embedded clause is licensed by the adjective *unfortunate* in the matrix. In the absence of a licensor of the *unfortunate* type, no *should* can be included in the embedded clause, as (141b) shows.

Now notice the contrast between the following two sentences:

(142) a. it is unfortunate that [what he should be] is proud of himself
b. *it is unfortunate that [what he is] should be proud of himself

That (142b) is ungrammatical is not too much of a surprise — after all, as is well known, SPCs in general do not allow for the addition of modals to the root: while *what John is is proud of himself* is grammatical, **what John is can be proud of himself* is not. (We will turn to this property of SPCs in section 5 of the paper.) But what is interesting is that (142a) *is* acceptable. Hence *unfortunate* is apparently capable of licensing emotive *should* in a clause which it does not govern. That this really is

[26] The idea that (139b) and (140b) are awkward because V-Prt reanalysis obligatorily applies in the *wh*-question (while it has failed to take place in the counterweight/answer) because of the fact that the object is extracted is not entirely unproblematic. Den Dikken (1995a) argues that V-Prt reanalysis is incompatible with modification of the particle by elements like *right*; and he also shows that V-Prt reanalysis fails, on principled grounds, in complex particle constructions like *they made John out a liar.* Yet extraction of the object in a complex verb-particle construction succeeds (*who did they make out a liar?*) and premodification of the particle in simple V-Prt constructions is not blocked when the object is extracted (*what did they look right up?*). An alternative rationalisation of the drive for inner particle placement in (139) and (140), in terms of *focus*, is offered in Kayne (1998:26).

an extraordinary property of SPCs is shown by the fact that emotive *should* cannot be licensed in a finite CP functioning as the subject of a clause embedded under *unfortunate*:

(143) it is unfortunate that [that he {is/*should be} proud of himself] caused a scandal

Even though subject sentences seem to behave like the *wh*-clause of SPCs in some other respects (see fn. 32, below), they do not follow the pattern of (143) at all.

For the 'syntactic reconstructionists' (Heycock & Kroch, Bošković), the grammaticality of (142a) of course constitutes no surprise. For them the embedded clause behaves like the simple clause in (141a) at LF; (141a) and (142a) are fully parallel. But our approach fares no worse in this domain; for on our analysis, too, there is the possibility of analysing the counterweight of the embedded SPC in (142a) as a full IP. Since, as will be evident in section 5, this IP is the root of the SPC, the adjective *unfortunate* can license emotive *should* in the counterweight IP. Parallelism between the modal content of the counterweight and that of the *wh*-clause then ensures that, whenever *unfortunate* does indeed select emotive *should* in the elliptical counterweight IP, *should* will also surface in the *wh*-CP.

Contrary to the Heycock & Kroch (1996) and Bošković (1997) approaches to the representation of SPCs, our analysis of the facts in (142) makes the prediction that the licensing of emotive *should* should fail when the linear order of *wh*-clause and counterweight is reversed — after all, SPCs with XP<*wh* order cannot be Type A SPCs; and since our account of the facts in (142) relies on a Type A analysis of the SPC in (142a), reversal of the major constituents of the embedded clause in this example should lead to ungrammaticality. This prediction is borne out:

(144) it is unfortunate that proud of himself is [what he {is/*should be}]

The fact that (144), while grammatical with *is* in the *wh*-clause, crashes with emotive *should* vindicates our analysis of the connectivity effects involving emotive *should* in terms of Type A SPCs and parallelism between the *wh*-clause and the (elliptical) counterweight.

4.3 Lack of parallelism in syntax: Expletives

While the foregoing discussion has carried the point home that the lack of parallelism between a *wh*-clause (or *thing*-type headed relative) and the counterweight/answer can be held responsible for the ungrammaticality of a variety of putative SPCs and QAPs, it turns out, on the other hand, that the drive for parallelism sometimes gets relaxed in particular ways.

For instance, consider again the example in (23) from section 2, repeated here as (145):

(145) ?what didn't happen was [an accident of any kind] (= (23), above)

We pointed out in section 2 that the fact that this SPC is acceptable, while surprising at first blush in the light of the ungrammaticality of **an accident of any kind didn't happen*, can be explained by assuming that (130) is the elliptical counterpart of the full-IP SPC in (146):

(146) ?what didn't happen was [~~there didn't happen~~ an accident of any kind] (= (25a))

This analysis gives us a handle on (145), but it does of course introduce a case of non-parallelism between the *wh*-clause and the counterweight of the SPC. But this does not turn out to be an SPC-specific quirk. For notice that the behaviour of QAPs is entirely on a par with that of SPCs, something which once again emphasises the connection between SPCs and QAPs.

(147) what didn't happen? — ?there didn't happen an accident of any kind

Mismatches in 'expletivity' are found with both expletives of English — not just with *there* but with *it* as well. We have already come across an example of this type: the example in (33a) from section 2, whose structure, on the Type A analysis, looks as in (43a), repeated here as (148):

(148) what didn't happen next was [~~it didn't happen next~~ [that anybody fell]] (= (43a))

Once again, QAPs exhibit a similar behaviour:

(149) ?what didn't happen next? — it didn't happen next that anybody fell

The theory of matching or parallelism for QAPs (and, by extension, SPCs (of Type A) as well) should be permissive enough to allow an expletive construction to serve as the answer/counterweight to a non-expletive construction in the *wh*-clause.

So what we have seen is that in the vast majority of cases we have reviewed, there is a strict parallelism constraint on the *wh*-clause and the counterweight/answer in SPCs and Question-Answer pairs. But in the case of expletive constructions, the drive for parallelism seems to be relaxed.[27]

Let us approach the problem from the perspective of the elliptical example in (148), and ask whether it is legitimate at all to delete an expletive *it* independently of its associate — something which, if the approach to (33a) that we developed in section 2 is to go through, must in fact be legitimate. The examples in (150), instantiating FWD in coordination constructions, show that this is indeed the case:[28]

(150) a. it is certain [that John is the culprit], and
~~it is~~ imperative [that he be caught]

b. it is assumed by some [that John is the culprit], and
~~it is assumed~~ by others [that Bill is]

c. to me, it is clear [that John is the culprit], and
to you, ~~it is clear~~ [that he is not]

d. by whom is it assumed [that John is the culprit], and
by whom ~~is it assumed~~ [that he is not]?

Hence, from the point of view of the deletion site itself (*it* being deleted alone, without its associate), the analysis of SPCs like (33a) as in (43a)=(148) is unproblematic. The same is true for similar examples, like the one in (151a), analysed as in (151b):

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[27] Another interesting case of lack of parallelism in SPCs, of a rather different sort, is the following. Higgins (1979:85) notes that the following is a grammatical SPC of English:

(i) what John does that we disapprove of is shave himself with a copper strip

What is interesting about this example is that it correlates with a simple clause counterpart in which what is a restrictive relative in (i) comes out as a non-restrictive relative:

(ii) John shaves himself with a copper strip, which we disapprove of

For approaches to SPCs along the lines of Heycock & Kroch (1996) and Bošković (1997), the pair in (i)-(ii) presents a difficult challenge: how to turn a restrictive relative into a non-restrictive one? From the perspective of our analysis of SPCs, on the other hand, the problem posed by (i) is similar, in a way, to the one we came across in the last paragraph of fn. 7 of section 3.2, addressing cases like *what John did to the book was burn it*. In both, what we see is that the *wh*-interrogative contains more information than the counterweight. We predicated the discussion in fn. 7 on the premise that all material present in the *wh*-clause gets represented in the counterweight. Suppose, though, that information contained in the *wh*-clause can be left uncopied. Then no problems are incurred by the *do+to* cases, the *to*-PP being represented in the *wh*-clause but not in the counter-weight; and (i), above, will be unproblematic as well. Thus, a relaxation of the semantic identity of *wh*-clause and counterweight will allow us to steer clear of any problems with regard to (i) and the *do+to* cases of fn. 7.

[28] Notice that, when we transform the second conjunct of (150a) into a SPC, as in (i), we discover yet another connectivity effect: subjunctive connectivity.

(i) what is imperative is [~~it is imperative~~ [that he *be* caught]]

Subjunctive connectivity behaves just like NPI connectivity in that it distinguishes between (30a) and (30b) — that is, while (i) is fine, (iia) is not (instead, (iib) must be used whenever no complementiser is realised); similarly, while (33a) is grammatical, (38a) is out.

(ii) a. *what is imperative is [he *be* caught]
b. what is imperative is [he *must be* caught]

For discussion of the distinction between (30a) and (30b) with respect to connectivity effects, see section 2.3.2.

(151) a. what is not possible is [that any students were there]
b. what is not possible is [~~it is not possible~~ [that any students were there]]

Examples of this type parallel those in (150b-d) with respect to the target of ellipsis; they pose no special problems in this domain, therefore.

Things are different, as already pointed out above, when it comes to the parallelism constraint to which ellipsis is subject (see section 3). While in the coordination examples in (150) the elliptical expletive in the second conjunct has a parallel, identical antecedent in the first conjunct, there does not seem to be an antecedent for the elided expletives in the structures in (148) and (151b). The question is, then, how the deleted expletive is licensed with respect to *recoverability* conditions. The structurally parallel antecedent for *it* in the *wh*-clause is *what* (or its trace). But deleted *it* cannot literally be identical with *what*, or its variable — it is not interpreted as a question word or as a variable. So to claim that *it* takes *what* as its antecedent would require tampering in an undesirable way with the notion of content identity.

Also, if *it* is parallel with the *wh*-phrase in (148) and (151b), then it should belong to the focus of the answer. But the pronoun *it* alone (where it clearly is an argument expression) can never form a focus; its strong pronoun counterpart *that* must be chosen, ellipsis or no ellipsis (cf. (152)). The pronoun *that*, on the other hand, cannot associate with an extraposed CP.

(152) a. *what is not possible is *it* (is not possible)
b. what is not possible is *that* (is not possible)

The solution for the parallelism problem will ultimately depend on the analysis of *it* in constructions with CP-associates. Is *it* in (148) and (151b) genuinely expletive (the theta-role going to the CP; this is the mainstream position, see Chomsky 1995), or does *it* count as an argument or predicate (entering some kind of cataphoric or predication relationship with the CP; cf. Bennis 1986 on *it* as an argument, and Moro 1997 on *it* as a predicate of the associate CP)? If the former, we might reasonably assume that *it* is not visible at LF in any case, thus satisfying conditions on FWD vacuously. If the latter, something extra needs to be said in connection with (148)/(151b) and the parallelism constraints on ellipsis.

From our present perspective, then, the optimal (or at least, the least cumbersome) approach is to treat *it* in (148) and (151b) as a genuine expletive, invisible at LF, hence not in need of an antecedent. The case of *there* (cf. (146)) will then be parallel, again on the assumption (taken in most of the literature on *there* sentences; but see Hoekstra & Mulder 1990, Moro 1997, Den Dikken 1995c for a different view) that *there* is an expletive. There is no antecedent for *there* in (146) any more than there is for *it* in (148)/(151b).

Concretely, then, we assume (by way of the easiest — but not necessarily the only — way out of the problem posed by (146), (148) and (151b)) that *it* and *there* are semantically vacuous placeholders, invisible from the LF representations of the constructions in which they occur. As such, they will assist the licensing of NPIs in examples like (145) and (151a), since at the point in the derivation at which the NPIs in these sentences are licensed (S-structure), the expletives are still present (i.e., no expletive replacement has yet taken place); but they do not cause any trouble with respect to parallelism, since by the time questions of content identity come into play (LF), the expletives are no longer there.

One might ask, since the expletives in (146), (148) and (151b) never receive a phonetic matrix at PF and do not survive at LF either, why they are present at all. Part of the answer is, of course, that, if they were not present, the NPIs would fail to be licensed (since we would not be dealing with post-verbal subjects in that case, but with preverbal ones instead). The other part of the answer is that these expletives must be present in SpecIP in the pre-Spell-Out representation of the elliptical clauses in (146), (148) and (151b) as a reflex of a purely formal requirement imposed by the I-head of the clauses that they appear in — the Extended Projection Principle (i.e., there is a strong D-feature on I which must be checked, and in the absence of movement of the logical subject to SpecIP expletives fill this position to meet the EPP).

To accommodate the non-realisation of the expletives in these elliptical cases, some mechanism must be assumed which suspends the requirement of PF-realisation, which is otherwise inviolable. The problem that then comes up is how to prevent such a mechanism from (wrongly) applying in non-elliptical IPs — for otherwise, given that it is not constrained by any requirement for an LF-antecedent, the mechanism allowing expletives to disappear in PF could in principle apply anywhere.

We have come across no case in which an overt finite Infl has a covert subject (expletive or not) in the elliptical IPs under discussion (QAPs and SPCs alike). It may suffice to assume, then, that PF-realisation of an expletive is forced only if its Infl is PF-overt. Then, FWD of finite Infl means that the PF-realisation of its EPP-checker is not necessary. No recoverability issue arises, as we have shown; so deletion of the expletive can then be viewed as being forced by the principle of maximal ellipsis discussed in section 3.3.

5 The analysis of Type A specificational pseudoclefts

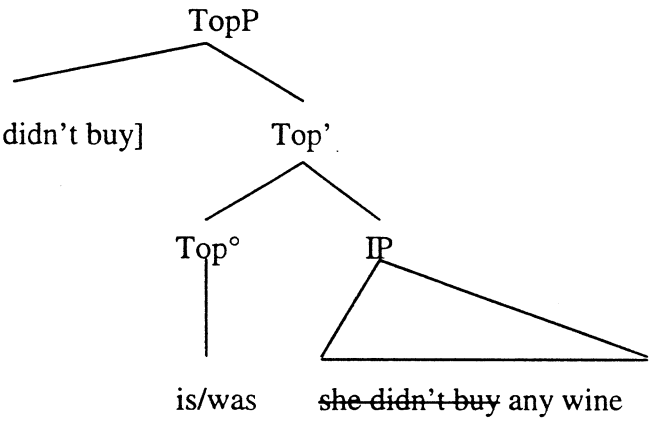
After this extensive review of the most important properties of specificational pseudoclefts of Type A, the (optionally) elliptical type, let us proceed to presenting an analysis of these SPCs which allows us to make sense of these and other characteristics of these constructions.

5.1 Topic-Comment

As our starting point we take the observation (cf. Hankamer 1974, Drubig 1996) that SPCs are 'topic-comment' constructions, the *wh*-clause being the topic and the counterweight the comment. We would like to structurally represent this observation by proposing the following analysis of Type A SPCs:

(153) (i) $[_{TopP}$ [*wh*-clause] $[_{Top°}$ is/was/were] [IP = counterweight]]

(ii)



The top structure of a Type A SPC is a TopP whose specifier position is filled by a base-inserted topic, the *wh*-clause; the head of TopP is filled by a form of the copula, and the complement of Top is the counterweight, a full IP (to which ellipsis optionally applies).

In the following sections we comment on the various ingredients of this structure of Type A SPCs, and discuss the predictions that this structure makes.

5.2 The topic

The *wh*-clause of a Type A SPC is an interrogative CP base-inserted into the specifier of the TopP. In this position, the *wh*-clause is neither a root question nor an embedded one. This gives the *wh*-clause of Type A SPCs a unique mixture of properties. Since the *wh*-clause is not a root question, it displays no Aux-to-Comp. But since it is not an argument of any predicate or a predicate of any argument

either, it does not behave strictly like non-root *wh*-questions with respect to topic placement. As we pointed out in section 4.1.2, topics can be placed in a position to the right of the *wh*-phrase in root questions but not in embedded questions, in English:

(154) ?to Mary, what should he give?
(155) ?I don't know [what to Mary, he should give]

And we also noted, in support of our *wh*-interrogative approach to the *wh*-clause of Type A SPCs, that these pseudoclefts allow topics to hop across the *wh*-phrase, as shown in (156).

(156) ?to Mary, what he will never give is any books

With regard to the placement of the topic in (156), the *wh*-clause of the SPC seems to behave like a root question. But interestingly, it seems that — in contrast to all other *wh*-constructions of English — the *wh*-clause of an SPC allows the topic to dock on either side of the *wh*-phrase in SpecCP; that is, (157) is acceptable to the same degree that (156) is:
(157) ?what to Mary, he will never give is any books

The *wh*-clause of SPCs can exhibit this hybrid behaviour thanks to is unique position in the tree: being base-generated in topic position, it is not theta-related to any constituent of the sentence, so adjunction to the maximal CP dominating the *wh*-clause is legitimate (cf. Chomsky 1986, 1995 on the restrictions on adjunction in connection with theta-theory; and see Motapanyane 1994 for evidence from Romanian showing that adjunction to CP is possible when CP is not an argument but barred when it is argumental); and since it is not a root question, featuring no Subject-Aux inversion, adjunction of the topic *inside* the *wh*-clause is also an option (on the assumption that the ungrammaticality of **what did to Mary, he give?* is due to the interference of the topic with Aux-to-Comp raising; cf. Kayne 1984:Chapter 9 on French inversion).

5.3 The comment

The IP counterweight in the complement of Top is the comment of the structure. It is a root IP; the TopP dominating it is an extension of its projection. And since the IP counterweight is a root clause, it can be coordinated with another root IP, in sentences like (158):

(158) what Bill is is [$_{IP}$ Bill is overbearing] and [$_{IP}$ Sue is timid]

Just as in regular cases of IP coordination, the second conjunct is subject to optional *gapping* affecting the copula *is* following *Sue*. The result of gapping applied to the second IP of (158) is the example in (159) (where '___' marks the position of the gapped copula), which is likewise grammatical:

(159) what Bill is is [$_{IP}$ Bill is overbearing] and [$_{IP}$ Sue ___ timid]

Finally, the IP in the first conjunct can undergo optional *ellipsis*, as in all cases of Type A SPCs. The result of ellipsis applied to the first IP in (159) is (160):

(160) what Bill is is [$_{IP}$ ~~Bill is~~ overbearing] and [$_{IP}$ Sue ___ timid]

Heycock & Kroch (1996:34) present examples of this type, which, though awkward, they judge to be grammatical. We concur with their judgement, and note that this type of construction is readily accommodated by the approach to SPCs taken in this paper.[29]

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[29] Heycock & Kroch (1996) accommodate examples of this type in a not dissimilar way: they reduce the SPC in the first conjunct to a simple IP at LF and perform linear processing on the resultant structure; by the time the gapping clause (the second conjunct) is processed (i.e. after the first conjunct has been processed), we are

5.4 *The Top-head*

The examples in (158)-(160) are derived from a structure involving coordination of two IPs — the IP in the complement of Top is coordinated with another IP, and regular gapping and ellipsis operations can be performed on the result. Of course, we may also have coordination target the higher TopP node in the structure of the SPC *what Bill is is (Bill is) overbearing*, and construct a coordination of two SPCs of Type A. As expected, the output is grammatical:

(161) [$_{TopP}$ [what Bill is] is [$_{IP}$ Bill is overbearing]] and
[$_{TopP}$ [what Sue is] is [$_{IP}$ Sue is timid]]

Ellipsis straightforwardly applies to the IP counterweights of each of the two SPCs, reducing (161) to (162), which is, again, fully grammatical:

(162) [$_{TopP}$ [what Bill is] is [$_{IP}$ ~~Bill is~~ overbearing]] and
[$_{TopP}$ [what Sue is] is [$_{IP}$ ~~Sue is~~ timid]]
(i.e. *what Bill is is overbearing, and what Sue is is timid*)

But interestingly, (162) cannot be further reduced via gapping of the *is* between the *wh*-clause and the counterweight in the second conjunct; that is, (163) is ungrammatical, as noted in Higgins (1979:305) and Williams (1983:249) (cf. also Heycock & Kroch 1996:32):

(163) [$_{TopP}$ [what Bill is] is [$_{IP}$ ~~Bill is~~ overbearing]] and
*[$_{TopP}$ [what Sue is] ___ [$_{IP}$ ~~Sue is~~ timid]]
(i.e. **what Bill is is overbearing, and what Sue is, timid*)

This shows us something important about the nature of the copula in SPCs: while run-of-the-mill copulas are perfectly gappable (even in inverse copular sentences like *the best candidate is John and the runner-up, Bill*), the copula in SPCs *must* be realised. This suggests that the copula in SPCs is not a run-of-the-mill copula: the *is* mediating between the *wh*-clause and the counterweight in an SPC such as *what Bill is is overbearing* has a function different from that of other instances of *be*; it is not a support vehicle for tense/agreement morphology, nor is it a signal of Predicate Inversion (cf. Den Dikken 1995b), but it marks the presence of the TopP structure typical of SPCs.

The form of *be* intervening between the *wh*-clause and the counterweight of a Type A SPC, then, is the overt realisation of the head Top in the structure of these constructions. In a non-coordinate SPC, Top must always be overtly realised — i.e., **what Bill is* [*Bill is overbearing*] is ungrammatical. We can make sense of the obligatoriness of the lexical spell-out of Top once we realise that TopP is always the highest functional projection in its clause; hence its head can never be 'properly governed' by any higher head, so that leaving the Top-head empty contravenes the ECP (or some modern incarnation thereof; cf. Stowell 1981 on the ECP as a restriction on non-trace empty functional heads).

Since in a simple, non-coordinate SPC the Top-head can never be left unrealised, it now follows straightforwardly that in a case of coordination of two TopPs, each of the Top-heads *must* be spelled out overtly. The root of the matter, then, is that Top must be overt; as a consequence, gapping the Top-head *is* in the second conjunct of (163) leads to ungrammaticality. The significance of this discussion of gapping in SPCs with respect to the analysis of SPCs presented in this paper is that it vindicates the TopP approach to the structure of Type A SPCs by showing that the mediating copula is a spell-out of the head Top, rather than a run-of-the-mill copula.

Before closing this section, let us consider other options. Heycock & Kroch (1996) have a different account of (163), building on their LF reduction approach to SPCs: since by the time the gapping clause is processed, the antecedent is no longer parallel to it (since iota-reduction has

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dealing with a straightforward case of coordination of two copular IPs with adjectival predicates: *Bill is overbearing and Sue is timid.*

'reshaped' the first conjunct into a simple IP), no gapping can apply to the relevant token of *is* in (163), for want of parallelism. There is evidence that distinguishes between Heycock & Kroch's approach to gapping in SPCs and ours, arguing in favour of the latter. Let us briefly review it here.

So far we confined our attention to SPCs featuring a *wh*<XP order. We know from the above that these can be of Type A. Reverse SPCs, with XP<*wh* order, by contrast, can never be of Type A, for reasons which we will turn to presently. This said, consider the behaviour of reverse SPCs in the domain of gapping, shown in (164)-(166). As the contrast between (165) and (163), and between (166) and (160) shows, reverse SPCs behave as the exact opposites of their *wh*<XP counterparts: the copula mediating between the XP and the *wh*-clause, while absolutely indelible in (163), is gappable in (165); but gapping fails in (166) while it succeeded in (160).

(164) overbearing is what Bill is, and timid is what Sue is

(165) (?)overbearing is what Bill is, and timid, what Sue is (cf. (163))

(166) *overbearing is what Bill is, and {timid, Sue/Sue, timid} (cf. (160))

From Heycock & Kroch's (1996) perspective on SPCs, the behaviour of the reverse cases in (165) and (166) with respect to gapping seems difficult to account for. They have iota-reduction 'transform' all SPCs, regardless of their surface word order, into simple clauses at LF; and as before, the feasibility of gapping in the second conjunct will depend on a parallelism restriction, the structure of the second conjunct being compared to that of the first, which by that time has been reduced to a simple IP in all cases of coordination of SPCs.

Concretely, then, by the time gapping in the second conjunct is processed in the examples in (165) and (166), what the processor is presented with on the Heycock & Kroch approach to SPCs are the following strings:

(167) Bill is overbearing, and [second conjunct]

a. ... [timid ___ what Sue is] (cf. **Bill is overbearing, and timid, what Sue is*)

b. ... [timid ___ Sue/Sue ___ timid] (cf. **Bill is overbearing, and timid, Sue*)

In neither of these cases is gapping expected to be permissible — correctly so in the case of (167b) (cf. the ungrammaticality of (166)), but contrary to fact in the case of (167a), given the well-formedness of (165).

While unexpected from Heycock & Kroch's (1996) perspective on SPCs, our analysis readily predicts the facts in (165) and (166). The thing to bear in mind is that these SPCs, surfacing as they do in a reverse, XP<*wh* order, can *only* be analysed as Type B pseudoclefts. Type B SPCs, as we pointed out in section 2.3.2, have a 'simple' small clausal structure, *not* a TopP structure. In fact, the TopP structure of Type A SPCs could never serve as the input to a derivation of the reverse, XP<*wh* order, for the simple reason that movement of the counterweight across the *wh*-clause in SpecTopP is out of the question — if such movement did take place, it would incur a violation of Relativised Minimality (Rizzi 1990) since the SpecTopP position would be crossed; and besides, there does not seem to be a landing-site available for XP-movement in any case. So the examples in (164)-(166) must be cases of Type B SPCs.

Type B SPCs differ in two crucial respects from their Type A pendants: (i) the counterweight of Type B SPCs is never an IP (for reasons discussed in section 2.3.2: IP is unacceptable as the subject of the small clause of which the *wh*-clause is the predicate); and (ii) the status of the copula mediating between the XP and the *wh*-clause in Type B SPCs is *not* that of spell-out of a Top-head, but rather that of a run-of-the-mill copula.

It is this latter difference between Type A and Type B SPCs that gives us the key to the account of (165). Since the copula sandwiched between *timid* and *what Sue is* in the second conjunct is a regular copula (cf. (ii)), and since we know that regular copulas are gappable, the grammaticality of (165) is as expected. The deviance of (166) is also straightforwardly accounted for. This particular output could only be got on the basis of the input in (164), *overbearing is what Bill is, and timid is*

what Sue is, by (a) gapping of the copula following *timid* (which is legitimate, as we just found out; cf. (165)) plus (b) ellipsis in the *wh*-clause, reducing *what Sue is* to plain *Sue*. But the latter will fail for obvious reasons, the conditions on ellipsis laid out in section 3 (in particular the need of an antecedent which makes the ellipsis site recoverable) being flouted. The analysis of SPCs laid out in this paper — in particular the distinction that it draws between Type A and Type B SPCs, reverse cases qualifying as unequivocal Type B specimens — thus captures all the gapping facts of SPCs reviewed in this section without further ado.

5.5 Restrictions on the root of specificational pseudoclefts

Let us take stock. We have proposed a structure for Type A SPCs involving a TopP, the specifier of which is occupied by the *wh*-clause (a base-inserted topic); the head Top is obligatorily filled by a form of the copula (which on this approach comes out as a kind of topic marker similar to Japanese *-wa*); Top takes as its complement the full-IP counterweight, which is subject to optional ellipsis. We have seen so far that this approach to Type A SPCs accounts in a straightforward fashion for the following batch of properties of these constructions:

(168) *properties of Type A SPCs explained so far*

a. NPI connectivity (strictly correlated with the distribution of 'undeleted' full-IP SPCs)
b. topic placement in the *wh*-clause
c. multiplicity
d. pied-piping effects
e. case connectedness
f. participial connectedness
g. restrictions on ellipsis (parallel to Forward Deletion)
h. parallelism effects
i. irreversibility
j. restrictions on gapping

In our account of (168j) we crucially appealed to the claim, emanating directly from our TopP approach to the structure of Type A SPCs, that the copula linking the *wh*-clause and the counterweight IP is an indelible lexicalisation of the Top-head. In what follows, we will start out by considering some other consequences of this claim, after which we will address a number of further properties of the root of Type A SPCs, which will be seen to fall out naturally from the account proposed.

5.5.1 Tense/Modality/Aspect/Modification/Inversion restrictions

One of the most 'celebrated' properties of SPCs is the fact that their root is subject to very tight restrictions on tense, modality, aspect, adverbial modification (including sentential negation) and Subject-Aux inversion, not shared by any other construction of English (or at least, not to the same extent).[30]

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[30] The discussion in this section is based largely on Higgins' (1979) example material; also cf. Bošković (1997) for a recent treatment of the TMA restrictions on SPCs.

Note that English Locative Inversion (cf. (i)) has been claimed in the literature (cf. Aissen 1975; Coopmans 1989) to be subject to a subset of the contraints which govern SPCs — for instance, Aissen observes that negative (ib) is ungrammatical, and Coopmans claims that Locative Inversion in English does not allow auxiliaries (cf. (ic)). But as Breckenridge (1975) has pointed out, (id) is grammatical, which suggests that the ban on negation and auxiliaries does not hold categorically of Locative Inversion constructions.

(i) a. on this wall hung a picture of US Grant
b. *on this wall never hung a picture of US Grant
c. *on this wall can hang a picture of US Grant
d. on this wall has never hung a picture of US Grant

In any case, whatever the precise extent of the restrictions on Locative Inversion, they will always be just a subset of the constraints ruling SPCs with *wh*<XP orders.

The TMA, modification and inversion restrictions that Type A SPCs evince can be captured by the following generalisations:

(169) a. the copula agrees in tense with the *wh*-clause
b. there can be no modal auxiliaries present in the root of a *wh*<XP SPC
c. there can be no aspectual auxiliaries present in the root of a *wh*<XP SPC
d. there can be no adverbial modifier/negation present in the root of a *wh*<XP SPC
e. there can be no Subject-Aux inversion performed to the root of a *wh*<XP SPC

Illustrative examples of each of these five generalisations are given in the example pairs below, where (169a) is exemplified by (170), and so forth:

(170) a. what John is {*is*/**was*} angry with himself
b. what John was {*was*/**is*} angry with himself
(171) a. what John could be *is* angry with himself
b. *what John is *could be* angry with himself
(172) a. what John has been *is* angry with himself
b. *what John is *has been* angry with himself
(173) a. what John isn't is angry with himself
b. *what John is {is*n't*/is *probably*} angry with himself
(174) a. ?I wonder whether what John is is angry with himself
b. *is what John is angry with himself?

What we will do in this subsection is show how these restrictions are explained by the TopP approach to Type A SPCs taken in this paper.

5.5.1.1 Tense harmony as a reflex of Spec-Head agreement in TopP

The fact that the copula linking the *wh*-clause and the counterweight IP of a Type A SPC has to agree in tense marking with the tense of the *wh*-clause can be viewed, on the present analysis, as a reflex of the Spec-Head agreement relationship obtaining between the *wh*-clause in SpecTopP and the copula in Top. The copula in Top is unique in comparison with the various other tokens of the copula in that its projection is not embedded in a TP; hence the copula linking the two major constituents of a specificational pseudocleft cannot receive an independent value for tense. It is entirely dependent, when it comes to tense, on the value for tense borne by the T-head of the *wh*-clause in SpecTopP. Via the general feature-sharing process of Spec-Head agreement, the copula in Top receives whatever value for tense is present in the *wh*-clause.[31] This takes care of the generalisation in (169a), illustrated by the examples in (170).

5.5.1.2 There is only one head (Top) between wh*-clause and counterweight*

The generalisations in (169b) and (169c), exemplified by (171)-(172), also fall our readily from our analysis — quite simply from the fact that there is one and only one head position between the *wh*-clause and the counterweight IP in the TopP structure of Type A SPCs: the Top-head. General principles of X-bar structure (reducible to more fundamental principles à la Kayne 1994 or Chomsky 1995) thus ensure that only bare *is* or *was* may intervene between the two major constituents of SPCs of Type A.

5.5.1.3 Restrictions on adverb placement

The fact that there can be no sentential negation or any other adverbial modifier attached to the root of a Type A SPC follows from general restrictions in adverbial placement, we would like to claim. First,

[31] Note that, even though T is not the head of the *wh*-clause in SpecTopP (which bears the category label CP), the tense features of T are visible on CP as a result of LF movement of T to C.

consider the ban on negation. On the assumption (argued for in work by Pollock 1989, Zanuttini 1991, Laka 1990, Haegeman 1994 and many others) that negation heads a functional projection of its own, and that this NegP finds itself below the highest inflectional projection of the clause (AgrS or T; we have conflated these to Infl since nothing turns on the split-IP hypothesis here), the fact that there can be no negation between the copula in Top and the counterweight IP follows straightforwardly: no NegP can be built on top of the IP in the complement of Top.

The ban on adverbial modification of the root of SPCs other than negation is a little less straightforward, both empirically and analytically. While the ungrammaticality of (173b) with *probably* following the copula is a well-known and undisputed fact about English SPCs (cf. Higgins 1979), Bošković (1997:268, fn. 35) observes that its counterpart featuring the adverb to the left of the copula (??*what John is probably is angry with himself*) is 'slightly better'. Let us see how we can make sense of this.[32]

The ungrammaticality of **what John is is probably angry with himself* cannot be explained with a simple-minded appeal to a general ban on adverbial adjunction to IP, for we know that adverbs like *probably* do readily precede IP in other contexts. Since we are treating the IP counterweight of a Type A SPC as a regular root clause, the ungrammaticality of the above example thus seems to raise a serious problem. We can make it follow, however, if we can ensure that adverbial adjunction to the IP in the complement of *be*-filled Top is not allowed (or, alternatively, if each adverb comes with its own functional projection, as in Kayne 1994, Alexiadou 1997, and Cinque, in press, that generating an AdvP on top of the IP in the complement of *be*-filled Top is impossible). Whatever the precise explanation of such a restriction (we have no particular insights to offer at this time), notice that such a constraint, generalised in such a way that it forbids adverbial modification of an IP in the complement of a functional head filled by a finite auxiliary, seems operative outside SPCs as well — it is responsible for the ill-formedness of sentences like (175):

(175) *why is *probably* John angry with himself?

The structure of (175) is highly similar to that of **what John is is probably angry with himself*: in both, there is an adverbially modified IP immediately dominated by a functional projection (CP in (175) and TopP in the SPC case) whose head is filled by a finite auxiliary. In both cases, ungrammaticality is the result.

The fact that ??*what John is probably is angry with himself* seems to be slightly better than its counterpart with *probably* to the right of Top suggests that adverbial adjunction to Top′ is marginally possible, presumably on the analogy of *John probably is angry with himself*, which involves adverbial adjunction to T′. Though adverbial adjunction to an X′ constituent is possible in principle (in the phrase structure model of Chomsky 1995), adjoining an adverb to the projection of Top is an unlikely move from a semantic point of view: there is nothing in Top′ which the adverb could directly modify. This explains the marginality of the example.

5.5.1.4 No CP above TopP in root clauses

While the discussion of adverbial placement in Type A SPCs has involved a certain amount of hand-waving, we can end the discussion of the generalisations in (169) on a much brighter note. The ban on Subject-Aux inversion in Type A SPCs, codified in (169e) and illustrated in (174), follows given that, as is well known on independent grounds, no CP can be built on top of TopP in matrix clauses. That is, the ungrammaticality of (174b) is on a par with that of (176a,b), the latter of which we have had occasion to discuss at various points in the foregoing discussion:

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[32] In addition to the text proposal, we can think of two alternative ways of capturing the improvement of the example provided by Bošković over the example in (173b): (i) the adverb in the former is inside the *wh*-clause, or (ii) the adverb is a parenthetical. The former would make the Bošković example parallel to ?**I wonder what John is probably t*; the latter assimiliates it with *John probably is angry with himself*. Neither seems to make exactly the right prediction regarding the status of the SPC case, the former making it worse than it actually is and the latter making it too good. We will set these two options aside at this time.

(176) a. *will to Mary, John give the book?
b. *what will to Mary, John give?

Since there can be no CP built on top of a root TopP, there is no head position above Top to which the copula in an SPC like *what John is is angry with himself* could possibly raise, to cross the *wh*-clause.

In embedded clauses, as we also know independently, from the grammaticality of (177), topicalisation *can* take place within (*wh*-interrogative) CPs:

(177) a. ?I wonder whether to Mary, John will give the book
b. ?I wonder what to Mary, John will give

The grammaticality of the SPC in (174a), *?I wonder whether what John is is angry with himself*, thus matches that of the examples in (177), as expected.[33]

Note that what was said above also immediately ensures that Type A SPCs are irreversible: an IP<*wh* order could be created on the basis of the TopP input structure, with the *wh*-clause in SpecTopP, only via raising of the counterweight and the head Top to the specifier and head positions of some functional projection on top of TopP. But we have just argued no such functional projection can exist. The irreversibility of Type A SPCs — one of our diagnostics for Type A status — thus follows.[34]

5.5.1.5 Where Type B is different

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[33] Bošković (1997) gives an account of the generalisations in (169) whose central tenet is that SPCs with *wh*<XP order lack an IP; that is, the copula mediating between the *wh*-clause and the counterweight projects a bare VP of which the *wh*-clause and the counterweight are constituents, and no IP can be projected on top of this VP (the reason being that, if an IP *was* so projected, the *wh*-clause would have to raise to SpecIP for EPP reasons; but such raising fails given that, in general, the *wh*-clause of an SPC is immune to raising). While Bošković's hypothesis covers the facts of root clauses, we wonder how it would accommodate *embedded* SPCs with *wh*<XP order: if such SPCs radically lack an IP, how can they be embedded under a *finite* complementiser like *that* (which is generally taken to categorially select an IP complement)? Note that Bošković is a representative of the 'syntactic reconstructionists'; i.e., at LF he transforms the SPC into a simple clause by raising the counterweight into the *wh*-clause, obliterating *what*. At LF, then, there will be an IP in the complement of the finite complementiser in sentences like *I think that what John is is angry with himself*; but selectional restrictions are standardly held to wield their powers at the outset of the derivation, not by the very end of it.

With regard to Bošković's initial representation of SPCs with *wh*<XP order, note also that he explicitly assumes that the *wh*-clause and the XP entertain no relationship whatsoever; they just happen to be constituents of a bare VP projected by *be*. What Bošković does not address is how (and why) Merge would ever bring together two constituents that are claimed to have no relationship to each other in a *lexical* projection headed by a semantically empty copula. Put differently, though everything in Bošković's analysis of SPCs works reasonably well *from* the point at which the VP of *be* has been put together, the crucial question for Bošković to answer is how that initial point in the derivation ever comes into being. Note that our approach faces no such questions: while we agree with Bošković in claiming that the *wh*-clause and the counterweight IP in Type A SPCs entertain no thematic relationship, the subconstituents of TopP are not unrelated — one can think of the connection between the base-topic *wh*-clause and the counterweight as being similar to the relation between an *as for* topic and the clause following it (cf. *as for cars, John likes {expensive ones/Buicks and Chevrolets}*); see Meinunger (1997) for further discussion.

[34] All that was said in this subsection with respect to Type A SPCs seems to carry over to constructions featuring subject sentences:

(i) a. that John is angry with himself is unfortunate
b. *is that John is angry with himself unfortunate?
c. ??I wonder whether that John is angry with himself is unfortunate

This is not surprising, if Koster (1978) is right that subject sentences do not exist; in actual fact, what looks like a clause in subject position is a clause in topic position (SpecTopP), linked to a silent filler of SpecIP. (The example in (ic) seems somewhat worse than the corresponding pseudocleft in the main text, for reasons that are unclear to us.)

Now that we have an account of the generalisations in (169) from the perspective of a Type A approach to the SPCs in question, let us point out that unequivocal cases of Type B SPCs do *not* exibit most of these restrictions (cf. Bošković 1997):

(178) a. angry with himself {*is*/**was*} what John is
b. angry with himself {*was*/?*is*} what John was
(179) a. angry with himself *is* what John could be
b. angry with himself *could be* what John is
(180) a. angry with himself *is* what John has been
b. *angry with himself *has been* what John is
(181) a. angry with himself is what John isn't
b. angry with himself {is*n't*/is *probably*} what John is
(182) a. I wonder whether what angry with himself is what John is
b. is angry with himself what John is?

Where Type B is the same as Type A is in the domain of tense and aspectuality restrictions (cf. (178) to (170) and (180) to (172)).[35] These are different from the various other restrictions on SPCs in that they involve a relationship of *feature agreement* between the *wh*-clause and the copula of the main clause — a relationship which is established both in Type A SPCs (via Spec-Head agreement in TopP) and in Type B SPCs (via complement selection: the copula takes the small clause of which the *wh*-clause is the predicate as its complement, and imposes selectional restrictions on this small clause predicate). Thus, in (178) the *wh*-clause has to agree in tense to the copula of the root. And (180b) crashes because the perfective root fails to match the imperfective *wh*-clause which it selects; interestingly, as soon as we perfectivise the *wh*-clause as well, we find an improvement (though it is tough to find a context in which (180b') would actually be meaningfully used).

(180b') ?angry with himself *has been* what John *has been*

The selectional restrictions between the root clause and the tense and aspectual features of the *wh*-clause are imposed by L-related heads of the clause immediately dominating the *wh*-clause (which, recall, is the predicate of the small clause in the complement of *be*). Non-L-related heads do not entertain a relationship of selection with the predicate of the small clause; hence no agreement with respect to modality or negation (Mod and Neg both arguably being non-L-related or A'-heads) is imposed in the examples in (179) and (181). And even though we have extended the range of possible selectors of small clause predicates beyond the immediate governor (V) up to the maximal L-related extended projection of V, we do still keep selectional restrictions very local — in particular, we expect them to be clause-bound. That this is the right result is shown by the fact that the past tense of *seem* in the example in (183) does not cause the *wh*-clause to bear past tense morphology (unlike what we see in (178b), where there is a local selectional relationship between the matrix tense and the tense of the small clause predicate under the copula, i.e. that of the *wh*-clause).[36]

(183) angry with himself seem*s* to be what John *was*

So, as desired, all but two of the restrictions to which we have seen Type A SPCs to be subject evaporate for the Type B cases: Type B SPCs involve a regular small clause structure

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[35] (178b) with *is* actually seems better than the reverse, while (178a) remains bad with *was*; we have no account for the surprising case of (178b), but to our knowledge no extant analysis of SPCs does.

[36] The reverse of (183) is ungrammatical regardless of the tense of the matrix and *wh*-interrogative clauses (cf. (i)), for reasons that will be discussed in the next section.

(i) a. *what John is seems to be angry with himself
b. *what John is seemed to be angry with himself
c. *what John was seemed to be angry with himself

embedded in a normal copular clause; there are no restrictions on modality, adverbial modification or Subject-Aux inversion, any more than there are in other copular sentences.[37]

5.5.2 *Why Type A SPCs are unembeddable under ECM and raising verbs*

Our TopP top structure of Type A SPCs provides an immediate explanation as well for the fact that these SPCs cannot be embedded under ECM and raising verbs. Recall from section 1 that the following examples of embedding an unequivocal Type A SPC under verbs like *call* and *describe as* are ungrammatical:

(184) a. *I'd call what John didn't buy any wine
b. *I'd describe what John didn't buy as any wine

The same is true for the examples in (185) and (186), involving attempts at embedding Type A SPCs in the infinitival complements of *believe* (ECM) and *seem* (raising), respectively:

(185) *I believe what John didn't buy to be any wine
(186) *what John didn't buy seems to be any wine

Of course accounting for the deviance of (184)-(186) on the TopP analysis of Type A SPCs is entirely straightforward. For we know independently, from the ungrammaticality of such sentences as (187a,b), that topicalisation in the complement of ECM verbs is out of the question:

(187) a. *I'd call [as for opera singers] Pavarotti the most successful of all time
b. *I believe [as for opera singers] Pavarotti to be the most successful of all time

And we also know that topics, base-generated as they are in A´-positions, do not undergo A-movement (which would involve improper movement). That is why there is no grammatical derivation for (186).

5.5.3 *Extraction restrictions*

One final property of SPCs left to be explained concerns the opacity effects that they incur. These are illustrated in (188)-(191):

(188) a. *what* do you think that John doesn't have [any pictures of *t*]?
b. **what* do you think that [what John doesn't have] is [any pictures of *t*]?
(189) a. [pictures of Berlin] I think that John doesn't have *t*
b. *[pictures of Berlin] I think that [what John doesn't have] is *t*
(190) a. who thinks that John has [which picture of Berlin]?
b. *who thinks that [what John has] is [which picture of Berlin]?
(191) a. I don't think that John has [any pictures of Berlin]
b. *I don't think that [what John has] is [any pictures of Berlin]

The deviance of the b-examples in the above sentence pairs leads us back to one of our central claims: the idea that SPCs are similar to QAPs, involving self-answering questions. What all the ungrammatical examples in (188)-(191) involve is a counterweight with an unbound variable in it — a trace of overt movement (in the first two cases) or LF extraction (in the latter two; we are adopting an LF-movement analysis of *wh-in-situ* and NPIs; cf. Moritz & Valois 1992, Den Dikken, to appear, and others for an LF-movement approach to NPI licensing). And answering a question with a constituent

[37] Bošković (1997) also assumes a regular IP structure for reverse (i.e. unequivocally Type B) SPCs; he hence makes largely the same predictions that we do, but note that since he does not assume there to be *any* structural relationship between the *wh*-clause and the counterweight in SPCs (regardless of their surface order), he fails to explain the persistence of tense and aspect restrictions in reverse Type B SPCs.

containing an unbound variable is no good — such constituents are not propositions, hence do not qualify as licit answers or counterweights.[38]

Notice that Bošković's (1997) analysis of SPCs also manages to account for the deviance of (188b) and (189b). For him these are ungrammatical as a result of the fact that their LF-derivation involves a violation of the constraint which prevents Move from applying to a trace or a constituent containing a trace (cf. Chomsky 1995). After all, Bošković šargues that at LF, *what* in the *wh*-clause of SPCs is replaced with the counterweight, via an LF instantiation of Move. Now, in (188b) and (189b) had Move already applied to the counterweight prior to Spell-Out — removing either a subpart of or the entire counterweight and raising it to the front of the root clause. The traces left by these overt applications of Move subsequently make it impossible for Move to target the counterweight again, at LF, to replace *what*. Since *what* has to be replaced by the counterweight, but since such replacement fails in the b-examples in (188) and (189), their ungrammaticality follows.

Elegant though this account may seem, it is fatally incomplete since it covers only the overt-movement cases in (188) and (189), and does not extend to the LF-movement examples in (190b) and (191b). In the latter two, no violation of any theoretical principle is expected to arise on Bošković's assumptions — after all, by LF the structure of an SPC is 'transformed' into a simple IP, basically parallel to the a-sentences in (190) and (191); and in a simple IP licensing a *wh-in-situ* or NPI should of course be entirely unproblematic, which (contrary to what Bošković leads us to expect) it is not.

5.5.4 Summary: The properties of Type A specificational pseudoclefts

With these results in mind, we can now go back to the list of properties of Type A SPCs that we had managed to get under control before we embarked on the discussion of the restrictions on the root of SPCs. That list was given in (168), repeated here:

(168) *properties of Type A SPCs explained up to section 5.5*

- a. NPI connectivity (strictly correlated with the distribution of 'undeleted' full-IP SPCs)
- b. topic placement in the *wh*-clause
- c. multiplicity
- d. pied-piping effects
- e. case connectedness
- f. participial connectedness
- g. restrictions on ellipsis (parallel to Forward Deletion)
- h. parallelism effects
- i. irreversibility
- j. restrictions on gapping

To this list we can now add the properties discussed in the preceding subsections:

(168) *properties of Type A SPCs explained in section 5.5*

- k. restrictions on the tense of the root clause
- l. the ban on modality in the root clause
- m. the ban on aspectual auxiliaries in the root clause

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[38] There is another potential account of the facts in (188)-(191) — the account of SPCs in terms of Predicate Inversion presented in Heycock (1991), which assimilates the ungrammatical cases to their counterparts in copular inversion constructions of the type discussed extensively in Moro (1997) and Den Dikken (to appear).

(i)
- a. I think that the cause of the riot is a picture of the wall
- b. *which wall do you think that the cause of the riot is a picture of *t*?
- c. *which picture of the wall do you think that the cause of the riot is *t*?
- d. *I don't think that the cause of the riot is any picture of the wall
- e. *who thinks that the cause of the riot is which picture of the wall?

We find these parallels important, but will stick to the TopP approach to SPCs here since it allows us to explain, besides these extraction restrictions, the constraints in the domain of tense, modality, aspect, modification/negation, and Subject-Aux inversion as well — constraints which, as the reader may verify, are not mimicked by copular inversion constructions of the type in (ia) (see also fn. 28, above, on Locative Inversion; also cf. fn. 37).

n. the ban on adverbial modification (including negation) of the root clause
o. the ban on Subject-Aux inversion in the root clause
p. the ban on extraction of and from the counterweight, both before and after Spell-Out
q. the ban on embedding under ECM and raising verbs

To our knowledge, this basically exhausts the inventory of characteristics of the (English) specificational pseudocleft construction that can be pieced together from the literature on the subject.

5.5.5 A left-over

Let us return to the examples in (185) and (186). The literature on SPCs assigns examples of these types a star categorically, regardless of whether we are dealing with cases involving NPI connectivity (i.e., unequivocal Type A cases such as the ones in (185) and (186)) or with plain SPCs like those in (192) and (193). In our judgement, the examples in (192) and (193) do improve slightly in comparison with the examples in (185) and (186); but we concur with the standard view that the former are not impeccable.

(192) *I believe what John is to be proud
(193) *what John is seems to be proud

In this respect, the *call* and *describe as* cases seem to be genuinely different, as we already noted in section 1 — while (184a,b) are out, their plain, NPI-less cousins in (194) are fine:

(194) a. I'd call what John is proud
b. I'd describe what John is as proud

The persistence of ungrammaticality in (192)-(193) *versus* the contrast between (184) and (194) now raises a delicate question. We have an account for the ungrammaticality of the examples in (184)-(186) on a Type A approach, built on the TopP structure in (153). We can extend this account to (192) and (193) on the tacit assumption that these also feature a structure of Type A SPCs. But the problem that arises is that there seems to be no particular reason why these examples should necessarily involve a Type A structure — since these sentences feature neither an undeleted, full-IP counterweight nor an NPI inside the counterweight, they might just as well be given a Type B analysis, it seems; and since Type B SPCs involve a regular small clause structure embedded under a run-of-the-mill copula, there would then appear to be no reason why embedding under ECM and raising verbs should fail in (192) and (193). The question is even subtler than this; for the grammaticality of (194) seems to suggest that in some contexts a Type B analysis should indeed be assumed.

All in all, while our story for Type A SPCs is solid and complete, our insistence on a two-way split in the realm of SPCs now seems to cause us trouble in the account of (192)-(194). While the main body of our paper has zoomed in on Type A SPCs, we are now forced to consider the question:

- *what about Type B SPCs?*

Note that the context of (184)-(186) and (192)-(194) is not the only one that leads to this question; in the discussion throughout section 4 we have come across a number of cases in which what was said there with respect to unequivocal Type A SPCs carries over to *all* SPCs with the order *wh*<XP. Let us address this question in the closing section of the paper (which is still tentative and open-ended at this point).

6 What about Type B SPCs?

6.1 Are all SPCs with wh<*XP order of Type A?*

Life with respect to the examples in (184)-(186) and (192)-(193) (and a variety of other cases in which the behaviour of unequivocal cases of Type A SPCs is exemplary of the entire set of SPCs with an order in which the *wh*-clause precedes the counterweight) would be simple if *all* SPCs with *wh*<XP order were instances of our Type A — hence would involve a TopP structure of the type in (153). What would then be left for Type B are cases in which the counterweight precedes the *wh*-clause. Suppose we hypothesise this:

(195) a. all and only those SPCs with *wh*<XP order are of Type A
b. all and only those SPCs with XP<*wh* order are of Type B

The only empirical fact that would seem to stand in the way of (195) is constituted by examples of the type illustrated in (194). We seem to be dealing with *specificational* pseudoclefts here; they have a *wh*<XP order; but, contrary to unequivocal cases of Type A SPCs, they do allow embedding under *call* and *describe as*.

So if we take the route defined by (195) we have to analyse (194) in some other way — in particular, we then have to deny that the pseudoclefts embedded under *call* and *describe as* in these examples are *specificational* pseudoclefts. Two options then come to mind:

(196) a. an analysis of (194) in terms of *predicational* pseudoclefts (PPCs)
b. an analysis of (194) in some hitherto unidentified third way

What flies in the face of an approach along the lines of (196) is the fact that, even though they do not exhibit NPI connectivity, constructions of the type in (194) do show all other connectivity effects typical of SPCs (and atypical of PPCs; cf. (198)). In (197) we illustrate this with reference to BT-A connectivity (but the other connectedness effects in (1)-(3), above, can be reproduced here as well):

(197) a. I'd call what *John* is proud of *himself*
b. I'd describe what *John* is as proud of *himself*
(198) what *John* does is important to {**himself*/*him*} [PPC]

It seems, then, that the counterweight in (194)/(197) cannot be classified as a predicate of the *wh*-clause, at least not in the same way that *important to him* is a predicate of *what John does* in (198), the latter being entirely parallel to the relationship between *important to him* and *his work* in a sentence like *his work is important to him.*

Hence, if (194) is not to be an SPC, the only thing we are left with is the claim that *tertium datur* — (194) instantiates a third type of construction, different from both SPCs and PPCs. Though we will not pursue this possible hypothesis at any depth here, it does seem to us that it would have something to recommend it. What (196b) would presumably come down to is the idea that *proud (of himself)* in (194)/(197) is a label of sorts — a label assigned to the *wh*-clause, paraphrasable in terms of a noun phrase headed by nouns like *qualification* or *label*, as in the example in (199):

(199) I'd give what *John* is the qualification/label "proud of *himself*"

Here, *proud of himself* seems to behave neither like a predicate nor like an argument. Possibly, sentences of this type instantiate *equative constructions*, whose properties are far from clear (see Heycock & Kroch 1996 and references there for some discussion of the problems posed by equatives).

(200) possibly, pseudoclefts of the type in (194)/(197) are *equative pseudoclefts* (EPCs)

Whatever the outcome of the discussion, though, the least we can conclude with respect to sentences like (194) and (197) is that their status as specificational pseudoclefts deserves is less than crystal

clear, and that only if one plays the *tertium non datur* gambit do these constructions seriously undermine the pair of hypotheses in (195) — hypotheses which open up an interesting, restrictive perspective on the dichotomy between Type A and Type B SPCs.[39]

6.2 *Connectivity effects in Type B SPCs*

The discussion of (197), featuring BT-A connectivity, also leads us to the broader question of how to deal with connectivity effects other than the ones which we have accounted for with the aid of our ellipsis approach to SPCs of Type A — in particular, the effects listed in (1)-(3) in the introduction (involving the Binding Theory, opacity and bound variable anaphora). As we know, these effects, as opposed to the NPI connectivity case which served as our prime diagnostic throughout the paper, show up in SPCs in either order: *wh*<XP and XP<*wh* alike:

(7) a. [angry with {*himself*/*him/*John*}] is what *he* is
b. [a unicorn] is what John seeks [*de dicto* or *de re*]
c. [a picture of *his* house] is what *nobody* bought
d. *[*any* wine] was what *nobody* bought

For the examples in (7a-c) we can be sure that, since undeleted full-IP counterweights are not possible in clause-initial position in SPCs (cf. (8), repeated below), we are not dealing with Type A SPCs; hence we cannot reduce the connectivity effects exhibited by these examples to straight c-command in an elliptical counterweight IP. So some other way has to be found to accommodate the connectivity effects in SPCs other than those involving NPI licensing (or, for that matter, case connectivity which we discussed in section 4.1.5).

(8) a. *[he bought some wine] was what John bought
b. *[he didn't buy any wine] is what John didn't buy

We may wonder which way to turn to find a suitable approach to SPCs that can give us the recalcitrant connectivity effects. In the introduction, we listed the three major types of approach to SPCs that the literature has brought forth: (i) the semantic approach, (ii) the syntactic reconstruction approach, and (iii) the ellipsis approach. Our analysis is a sophisticated specimen of the third variety; and we know that it will not deliver in the case of (7a-c). So we are left with (i), (ii) or some entirely novel approach. Of the two extant possibilities, the syntactic reconstruction approach seems out of the question. After all, we emphasised in the above that the connectivity effects exhibited by SPCs split

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[39] They do of course raise the question as to *why* these linearity statements should hold. The fact that Type A SPCs can only feature a *wh*<XP order follows from the TopP analysis in (153); but the converse claim, inherent in (195), that Type B SPCs have a rigid XP<*wh* order does not follow from anything we have said so far. The structure we have proposed for Type B SPCs (following Heggie 1988, Heycock 1991) — given in (42) in the main text, repeated below as (i) — is a predication structure in which the *wh*-clause functions as the predicate of the counterweight XP.

(i) [$_{SC}$ [$_{Subject}$ countweight] [$_{Predicate}$ *wh*-clause]]

Deriving the XP<*wh* order from this base structure is of course entirely straightforward; the inverse, *wh*<XP order could only be derived from (i) by applying some leftward movement process to the predicate of the small clause — presumably an instance of Predicate Inversion. This said, we can ensure a rigid XP<*wh* order for Type B SPCs on the hypothesis that Predicate Inversion fails to apply to the predicate of the small clause in (i), because the predicate is of the wrong type, in a sense to be made precise. Notice that not just any predicate can undergo Predicate Inversion in English — thus, while (iia,b) are fine, (iic) is ungrammatical. The restrictions on the types of predicate that can be affected by Predicate Inversion are still largely mysterious; but the possibility certainly presents itself to group the free relative in (i) together with predicates like *a doctor* in (iic), and to thus rule out *wh*<XP orders for Type B SPCs as a reflex of general restrictions on Predicate Inversion. We leave this possibility, and the further questions that it raises, as a topic for future investigation.

(ii) a. the best doctor in town is John
b. the doctor is John
c. *a doctor is John

out into two separate classes — those involving NPI and case connectivity *versus* all the others. Now, precisely because the syntactic reconstruction analyses proposed by Heycock & Kroch (1996) and Bošković (1997) by their very nature generalise over *all* possible cases of connectedness (since they reshape the S-structure pseudo-cleft into a simple IP at LF), they have no obvious tools to make the desired split.

More promising would seem to be a particular development of a semantic approach to a subset of connectivity effects, along the lines of Sharvit (1997). Such an approach can, in principle, be tailored precisely to the needs of the empirical lie of the land — those connectivity effects that persist in all SPCs regardless of their word order and regardless of the syntactic environment in which the SPC shows up will come under the umbrella of *semantic* connectivity, while those whose distribution is exactly that of Type A SPCs are of a fundamentally *syntactic* nature (as we have shown at length in these pages). Ultimately, then, the facts of pseudoclefts will teach us precisely which connectedness effects belong to the syntax and which do not. It will then be up to semantic theory to appropriately delineate the class of semantic connectivity effects (as distinct from their syntactic cousins). Obviously, undertaking a project which will yield an appropriately explicit semantic theory of connectivity is well beyond the scope of the tasks we had set ourselves at the outset of this paper. We will therefore leave this issue as a topic for future research.

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Inversion and Equation in Copular Sentences

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1 Introduction: The problem of copular sentences

The apparent ambiguity of the copula in English and other languages has long posed a problem for linguists and philosophers. In (1a), where the postcopular phrase is clearly predicative, *be* appears to make no semantic contribution other than bearing tense information; in (1b), where the postcopular phrase is referential, *be* appears to be a predicate of identity or equation.

(1) a. Kim is happy/a nurse/president of the association

b. The cause of his illness was this virus here.

As first pointed out in Higgins 1973, whatever analysis is given to copular sentences like (1b) should also be given to pseudoclefts like (2):

(2) What caused his illness was this virus here

A central question that has to be resolved in the analysis of copular sentences, then, is whether the copula is indeed ambiguous between these two interpretations. Settling this question is crucial to understanding pseudoclefts. Only when the basic structure of copular sentences has been established do we have a foundation for the explanation of the well-known but highly problematic connectivity facts that make this construction so important to understanding the syntax/semantics interface.

The outline of our talk is as follows: We will briefly review recent analyses that resolve the ambiguity of the copula by proposing that it has only the first of the two readings discussed, that is, that it is always an essentially meaningless element bearing only tense information. Under these analyses there are no equative sentences: apparent cases of equation, including pseudoclefts, are treated as inverted predications. We will present evidence that some copular sentences, at least, have to be treated as instances of equation rather than as inverted predications, and that pseudoclefts belong to the class of equatives. Having established the existence of equatives, we will then address the question of whether inverted copular sentences also exist. The strongest evidence for the existence of inverted sentences appears to be the inverted agreement pattern noted for Italian in Moro 1990, 1997. We will argue that these sentences are indeed inverted—but that they are inverted equatives, not inverted predicative sentences. In fact it will emerge that the canonical/inverted distinction is orthogonal to the distinction between predicative and equative sentences. Crucially for the analysis of connectivity, pseudoclefts turn out to behave as equatives rather than inverted predicates with respect to all the phenomena that we discuss.

2 Copular sentences as inverted or uninverted predications

We will begin by reviewing very briefly the work of Williams 1983, 1994, 1990, 1997, Heggie 1988, Moro 1990, 1997. Although these accounts vary to a greater or lesser extent, they have in common that they attempt to reduce either some (Heggie 1988, Williams 1997) or all (Moro 1990, 1997, Williams 1997) copular sentences to the predicative type, thus avoiding the problematic ambiguity of *be*. This analysis has also been extended by Williams to cover pseudoclefts as well as non-cleft copular sentences. Thus, an example like (3a) is taken to involve the leftward movement of the underlying predicate *what I want a man to be* past its subject *honest*, just as (3b) involves the leftward movement of *the culprit* past *John*.

(3) a. [what I want a man to be]$_i$ is [$_{SC}$ honest t$_i$]

b. [the culprit]$_i$ is [$_{SC}$ John t$_i$]

In addition to the fact that this approach allows for a unified analysis of the copula, it has been argued to have other advantages; we have reviewed these elsewhere (Heycock and Kroch 1996) and will not discuss them here. For the moment we wish to concentrate on the question of the reduction of apparent equatives to inverted predicative sentences.

3 Reasons not to reduce equation to predication

3.1 Pseudocleft free relatives

The first problem with reducing pseudoclefts to inverted predications is that the free relatives in pseudoclefts do not consistently behave like predicates. Recall that under the inversion analysis the pseudocleft in (4a) is produced by "inverting" (1b)—in both orders the predicate is the free relative *what she did*:

(4) a. What she did was run the marathon.

b. Run the marathon was what she did.

One might expect that this free relative predicate would have show atypical behaviors when it has moved to the initial position, as this is not the default position for predicates. However, in (b) it is in the canonical predicate position and should, therefore, undergo the same syntactic operations as other predicates. In fact, however, it does not. As the following contrast shows, pseudocleft free relatives do not undergo predicate preposing:

(5) a. She said that she would run the marathon; and run the marathon, she did.

b. She said that she was honest, and honest she was.

c. * She said that run the marathon was what she would do; and what she did, run the marathon was.

Further, ordinary predicates standardly appear in small clauses. Thus, corresponding to the copular sentence in (6a), we find the small clause constructions in (6b,c)

(6) a. John is honest.

b. I consider John honest.

c. With John so honest, we have nothing to fear

Higgins and subsequently Williams note that pseudoclefts do not appear in small clauses:

(7) a. * I consider what John is honest.

b. * With what John is honest, we have nothing to fear

Williams' explanation for this pattern is that small clauses have no landing site for the inverted free relative predicate. Conversely, we would expect a pseudocleft which has not undergone inversion (the so-called "reverse" pseudocleft, as in *Honest is what John is*, to have a small clause counterpart. However, the examples in (8) and (9) are ungrammatical:

(8) a. Honest is what John is.

b. * I consider honest what John is.

c. * With honest what John is, we have nothing to fear.

(9) a. Read poetry is what he does best.

b. * I consider read poetry what he does best.

c. * With read poetry what he does best, he'll be a great success.

Interestingly, the examples in (10) and (11) are significantly better:

(10) a. This book is what you should read next.

b. I consider this book what you should read next.

c. With this book what everyone is reading, we'll have to discuss it.

(11) a. That it was raining was what he should have said.

b. ? I considered that it was raining what he should have said.

c. ? With that it was raining what he believed, I expected him to take an umbrella.

On an inversion account, the contrast is unexpected: all of the small clauses should be perfect. What seems to be going on is that the examples where the small clause subject is a noun phrase or a *that*-clause have a secondary interpretation as predicative structures. Like other definite noun phrases, free relatives can function as predicates. When they do, however, they must have ordinary noun phrase subjects (hence the ungrammaticality of (8b,c) and (9b,c)), and the resultant sentence is not a pseudocleft. The distinction between this case and the pseudocleft case is not available to an analysis that treats pseudoclefts as predicative sentences.

Finally, Williams notes the contrast in (12):

(12) a. Proud of himself seems to be what John is.

b. * What John is seems to be proud of himself.

He claims that the (a) sentence is just an instance of subject-to-subject raising, and that the ungrammaticality of the (b) sentence follows directly under the inversion analysis if such raising is limited to subjects: specifically, if it cannot apply to predicates. The facts regarding raising, however, are more complex and make it impossible to maintain his simple dichotomy.

Firstly, there is ample evidence that unequivocal predicates will raise from a fronted position, as illustrated in (13):

(13) Especially dishonest seems to have been the Rockefeller family.

Given this example, we no longer expect (12b) to be ungrammatical.

Secondly, an inversion analysis of copular sentences in general treats an example like (14a) as inverted—that is, derived by predicate fronting. However, these examples also freely allow raising, as shown in (14b):

(14) a. The best player is Kim.

b. The best player seems to be Kim.

In light of these facts, it appears that the failure of raising in canonical order pseudoclefts is not part of a general ban on raising predicates, whether or not the inversion analysis is correct. Under any presently available analysis of pseudoclefts it remains a mystery.

3.2 Type ambiguity

By analyzing pseudoclefts and non-cleft "specificational" sentences like (3a,b) as involving leftward movement of an underlying predicate to the Spec(IP) position, the authors we have mentioned appear to simplify the grammar. There is only one, unambiguous *be*, and small clauses are invariably Subject–Predicate; the only variation that exists is that either the subject or predicate can raise.

As happens so frequently in linguistics, however, this simplification is bought at the expense of complication elsewhere, as shown by the examples in (15):

(15) a. Honest is what I want a man to be.

b. John is what I want a man to be (i.e. he's honest).

Since these sentences are both grammatical, an approach that denies the existence of equatives is forced to allow the free relative *what I want a man to be* to be ambiguous as to logical type, so that it can not only be of type $\langle e,t\rangle$ as required by (15b), where the subject translates as a constant, but also of type $\langle\langle e,t\rangle,t\rangle$, as required by (15a), where the subject translates as a predicate. If on the other hand we allow for the existence of both predicative and equative copular sentences, the type of the free relative can be $\langle e,t\rangle$ in both (15a) and (15b). The difference between them is simply that in the first the two properties are equated, while in the second the property is applied to the subject. This result is attractive since $\langle e,t\rangle$ must be the type of the position out of which *what* is extracted.

3.3 Tautologies

This problem arises in an even sharper form in the case of tautologies, like those in (16):

(16) a. When it comes down to it, honest is honest.

b. In the end, long is long.

c. You can dress it up if you like, but in the end being dishonest is just being dishonest.

The syntactic problem here is the same: the adjectives *honest*, *long*, *dishonest*, etc. will have to be ambiguous as to type: as well as being of their normal type ($\langle e,t\rangle$) in these sentences one of them must be of the higher type $\langle\langle e,t\rangle,t\rangle$. By hypothesis, this might be the first or the second one in the sentence, depending on whether it is interpreted as inverse or canonical.

These sentences however make it clear that there is also a semantic problem. In (16a), for example, honesty is not being ascribed to the property of being honest in the way that honesty is ascribed to John in the sentence *John is honest.* Instead, this sentence is a tautology, in which the *honest* property is asserted to be identical to itself. In order to get this interpretation from a predicative analysis of (16a), it will be necessary to associate with type-raising of the adjective a change in its meaning, from *honest*(x) to *be identical to honest*(x). In other words, if equation is removed from the syntax, it has to be put back into the semantics.[1]

Notice that adopting a predicational analysis of tautologies actually obviates the need for syntactic inversion in so-called inverse copular sentences including pseudoclefts. Consider the following example:

(17) What John is is honest

On an inversion analysis of this sentence, the free relative has the type $\langle\langle e,t\rangle,t\rangle$. But as Williams (1990) acknowledges, the same free relative must sometimes have the type $\langle e,t\rangle$, as in the example:

(18) I am what John is

We have shown that under the predicative analysis one of the occurences of *honest* in the tautology (16a) must be of type $\langle\langle e,t\rangle,t\rangle$. We can now assign the type $\langle e,t\rangle$ to the free relative in example (17) and the type $\langle\langle e,t\rangle,t\rangle$ to the postcopular adjective. With this assignment of types, the sentence is no longer inverse. Like the tautologies, it has become syntactically predicative and semantically equative.

3.4 The order of the logic of natural language

Williams (1990) has noted that the type raising operation needed to generate sentences like (15a) cannot be allowed to apply freely. If it did, we could construct a free relative like (19):

(19) what honest is

out of (15a) in the same way as we can construct the free relative *what I want a man to be* out of (20):

(20) I want a man to be honest.

The free relative (19) should then be a predicate over predicates over predicates (*i.e.*, a third order predicate); and with it we should then be able to construct sentences like (21):

(21) * What John is is what honest is.

However, such sentences are always ungrammatical and uninterpretable.[2]

Williams himself gives no reason why such third order predicates are not constructable, supposing their non-existence to be a primitive property of natural language. Since Williams's higher order predicates are constructed syntactically, however,

[1] Why speakers are reluctant to equate lexically different predicates (in comparison to their relative willingness to equate entities), however, we do not at present understand.

[2] This example would be possible under an equative analysis of the post-copular free relative's internal structure through relativization on the second argument. However, the free relative clause itself is equative under this analysis and we know that extraction out of equatives is not possible (see Heycock and Kroch 1996).

and since syntactic operations are generally recursive, the absence of recursive type raising is actually surprising if the operation is available to natural language syntax. Under an equative analysis, there is no type raising, hence no need to stipulate a limit to its application.

3.5 Overgeneration of inverted predicates

The inversion analysis for sentences like (15a) also leads to serious difficulties in constraining the relevant transformational movement. If phrases of type $\langle e, t \rangle$ may occur in subject position (as they must for (15a) to be grammatical), and if predicates can move past their subjects (as this analysis crucially assumes) there is no simple way to account for the contrast between (15a) and the ungrammatical (22):

(22) * Honest is John

Given an equative analysis of (15a), however, there is an easy explanation for the impossibility of (22). Suppose we assume, along with Williams and Moro, that within a predicative small clause—whether the complement to *be* or elsewhere—the order Subject–Predicate is fixed. Under an equative analysis, we may further assume, *contra* Williams and Moro, that Spec(IP) in copular sentences is restricted to being the landing site of the subject of the small clause complement of I, just as it is when I takes a VP complement with an overt subject, presumably for reasons of minimality. Movement of the predicate to Spec(IP) is never possible. This analysis is attractive in its simplicity and we have adopted it in previous work (Heycock and Kroch 1996).

By constraining movement to Spec(IP) in copular sentences in this unmarked way, we directly explain the contrast between (15a) and (22) and also that between (23a) and (23b):

(23) a. What I want a man to be is honest.

b. * What I want a man to be is John.

These examples contain the same phrases as (15a,b), except in the other order. Under the inversion analysis, there is no explanation for the clear difference in grammaticality between them.[3] They should both be equally acceptable as inverse predications—note in particular that the grammaticality of (23a) shows that the phrase *what I want a man to be* can occur happily in initial position. Under our equative analysis (23a) is fine because it is an equation of two predicates (just as (15a) was); (23b) is ungrammatical because it can neither be interpreted as a predicative copular sentence (since *John* cannot be a predicate) nor as an equative (since the first argument *is* a predicate and therefore cannot be equated with a constant). It fails then for precisely the same reason as (22).

Our account has the further advantage of explaining a hitherto unnoticed gap in the inversion paradigm that a Moro-style analysis predicts. Long ago, Higgins 1973 noted that pseudoclefts behave in almost every way like sentences where a headed relative clause replaces the pseudocleft free relative. Compare (24a,b) to (15a,b) above:

(24) a. Honest is the one thing I want a man to be.

b. John is the one thing I want a man to be (i.e. he's honest).

[3] (23b) is possibly marginally grammatical on the reading where *John* denotes some kind of property, but of course this is entirely consistent with our argument, as it involves coercing the postcopular phrase into a first-order predicative interpretation so that it can be equated with *what I want a man to be*.

Clearly, in these examples the postcopular expression is a definite NP; and under Moro's analysis it is just such predicates that should invert. But the "inverted" variant of (24b) is ungrammatical:

(25) * The one thing I want a man to be is John.

Of course, for us, (25) is excluded for the same reason as (23b) and as (22): Predicates can't move to Spec(IP) past their subjects.

Finally, we also have a straightforward account for the failure of inversion in cases like (26) and (27):

(26) a. I consider Kim the best candidate.
b. Kim is considered the best candidate.
c. * The best candidate is considered Kim

(27) a. % Kim seems the best candidate.
b. * The best candidate seems Kim.

On the assumption that the small clause complements to *consider* and *seem* are unambiguously subject–predicate structures, it is not obvious how to prevent the movement of the predicate past the subject in the passive cases if predicates are in general able to move past their subjects. For us, on the other hand, the ungrammaticality of (26c) and (27) follows straightforwardly from the ungrammaticality of the examples in (28):

(28) a. * I consider the best candidate Kim.
b. * The best candidate seems Kim.

4 Where we now stand

4.1 Equatives are not reducible to inverted predicatives

To summarize our discussion to this point, we have established the following facts:

1. Copular sentences are unavoidably ambiguous; the ambiguity must reside either in the logical type of the predicate or in the interpretation of the copular relation.

2. The inversion analysis, which assumes a univocal copular relation, overgenerates and provides no explanation for why only those copular sentences in which the predicate is not of the normal predicate type ($\langle e,t\rangle$) allow the "inverted" order.

3. An analysis under which the copular relation is ambiguous between predication and equation correctly predicts, without the need for stipulative constraints on type shifting, the observed pattern of grammaticality and interpretation.

4.2 Ambiguous copular sentences without ambiguous "be"

It might seem that we are now in the position of having to posit ambiguity for the copula itself, given that we argued that both predicational and equative copular sentences exist. However, we believe that the source of the two interpretations should not be traced back to the copula: rather there is evidence that the copula is always semantically vacuous. The difference between the two types of copular sentence is due instead to the existence of two types of small clause, one predicative and the other equative.

The existence of a distinction among small clauses of the relevant sort was argued for in Heycock 1994 (although the analysis given in that paper differs from the one that we have now arrived at). In that paper it is shown that, alongside the more familiar predicational small clauses like (29a), we can find in the English *make* construction "inverse" small clauses like (29b,c), which have the typical equative interpretation:

(29) a. I consider John the real murderer.

b. But if what you say is true, that would make the real murderer John!

c. But if what you say is true, that makes your attitude towards Jones my attitude towards Davies!

As in the case of copular sentences, the first noun phrase in these equative small clauses must not be interpreted as a predicate, as would be the case with a non-specific indefinite:

(30) a. ?? If the child dies, that would make a murderer John.

b. ?? A murderer was John.

From the examples in (29), we must conclude that equative semantics is independent of the presence of the copula. Indeed, there is also evidence, first noted in Heycock 1994, that equative small clauses also occur as the complements to raising verbs other than *be*. The verbs *remain* and *become*, to cite the two clearest examples, also subcategorize for equative small clauses, as illustrated in (31) and (32):

(31) a. The real problem remains what to do next.

b. The best solution remains instant retreat.

(32) a. At this point our real problem becomes John.

b. The critical problem now becomes how to set the parameters.

We will not discuss these examples in detail here. But their existence reinforces the point that the predicative/equative distinction is independent of *be*,[4] and allows us to maintain that *be* is a raising verb in all cases. Of course, some verbs select only for predicative small clauses, while others can select for either type.[5] We conclude, therefore, that there are both equative and predicative small clauses. The copula (like the aspectual verbs *become* and *remain*) can take either type as its complement: hence the ambiguity of copular sentences. Clearly a question that now arises is the nature of the difference between predicative and equative small clauses. We have not yet fully resolved this question. Our speculation is that the equative small clauses involve some functional head, absent from the predicative cases (this conclusion is reached for copular sentences in Irish in Carnie 1995, and for independent reasons in Heycock 1994). More research is needed on this question. What we do take to be established, however, is the location of the ambiguity of copular constructions in the ambiguity of the small clause complement to the copula, and not in any lexical ambiguity of the copula itself.

[4]Other arguments, based on data from Hebrew and Irish, against deriving the two readings of copular sentences from lexical ambiguity of the copula can be found in Doron 1983, Rapoport 1987, and Rothstein 1995 (for Hebrew), and Carnie 1995 (for Irish).

[5]We are not aware of any heads that select *only* equative small clauses. We have not yet explored possible reasons for this implicational asymmetry.

5 Do inverse copular sentences exist?

At this point, we might want to claim that inverted copular sentences simply do not exist and are ruled out by ordinary locality constraints on movement. But while this conclusion is correct for many of the cases discussed under the rubric of copular inversion, there are cases that force us to a more nuanced position. It turns out that there are indeed inverted predicative copular sentences; but these can be shown not to involve A-movement to the Spec(IP) position. Furthermore, there is evidence that the most interesting class of inverted copular sentence is not the inverted form of a predicational sentence, as the standard treatment of copular inversion claims, but rather an inverted equative sentence, surprising though this may seem.

5.1 Predicate fronting in English

Before discussing the most interesting cases, we will first deal with the clearest case of "inversion", the predicate fronting described in Birner 1992 that is found in examples like (33):

(33) a. The paintings by O'Keefe were wonderful. ??(Even more) impressive were the murals by Rivera.

b. My last guest was a charming woman. ??(Also) a charming woman is my next guest.

c. Voting *for* the amendment were the senators from Maine.

d. Delinquency is a menace to our society. Also a menace are/*is factory closings and fascist propaganda.

As these examples show, such predicate fronting requires special discourse context and typically includes an explicit indicator of comparison. The fact that predicates of all categories can front points to inversion as the correct analysis of this case.

There are other reasons, some discussed in Heycock (to appear) and Heycock and Kroch 1996, that lead to an analysis of this construction as movement of the predicate to a left-peripheral A-bar position, which we assume to be Spec(CP), rather than to Spec(IP).

1. **Agreement**: In contrast to the "inverse" copular sentences that we have analyzed as equatives, in this construction the copula agrees with the postcopular nominal, even when it is a noun phrase that has been fronted. This can be seen in the examples (33) above. Note that sentences like (34), which lack the pragmatics of predicate fronting, also lack the inverse agreement pattern:

   (34) The biggest problem is/*are factory closings

   This example, however, is a standard case of a Moro-type "inverse copular sentence," which we have analyzed as equative (see Heycock and Kroch 1996).

2. **Binding of pronouns**: Again in contrast to the Moro-style "inverse" sentences that we analyze as equatives, these predicate fronting cases allow a pronoun in the fronted element to be bound by a postcopular quantifier. Thus for example we find the contrast in (35), where (35a) is an ordinary predicative sentence, (35b) is an equative (but under the Williams/Moro analysis the inverse form of (35a)), and (35c) is an instance of the predicate fronting construction we are now discussing.

(35) a. Every country in Western Europe was the enemy of its neighbor
b. * The enemy of its$_i$ neighbor was [every country in Western Europe]$_i$.
c. (In the late 19th century Japan became a threat to its neighbors.) Also a threat to its$_i$ neighbors was [every country/more than one country in Western Europe]$_i$.

The possibility of binding is identical between the canonical predicative sentence in (a) and the predicate-fronting example in (c). This suggests that (c) involves leftward A-bar movement of the predicate, since it is known that such movement does not interfere with binding relations.

3. **Embedded contexts:** As expected if the predicate fronts to Spec(CP), this construction cannot in general appear in embedded clauses, as shown in (36)–(37)

(36) a. If the Picasso paintings are also interesting, we'll stay on.
b. * If also interesting are the Picasso paintings, we'll stay on.

(37) a. I wonder whether the Picasso paintings are also interesting.
b. * I wonder whether also interesting are the Picasso paintings.

Again as expected, the construction *does* appear in one embedded context—precisely where we have independent evidence for CP-recursion (Iatridou and Kroch 1992):

(38) a. I think that the Picasso paintings are also interesting.
b. I think that also interesting are the Picasso paintings.

4. **Subject-Aux Inversion:** Finally, the fronted predicate cannot invert with the auxiliary in a yes-no question, again as expected if it occupies Spec(CP):

(39) a. Are factory closings also a menace to society?
b. * Are also a menace to society factory closings?

Note that the patterns in (36)–(39) contrast sharply with the behavior of equative sentences, which occur freely in these environments:

(40) a. If the biggest problem is factory closings, then we're ok.
b. I wonder whether the biggest problem is factory closings.
c. Is the biggest problem factory closings?

The contrast between the behavior of the predicate fronting cases and the Moro-style "inverse copula" cases supports our analysis of the latter as equative and as non-inverted. As far as we know, there are no other cases to consider in English. Hence, we conclude that English has both inverted and canonical order predicative sentences but only canonical order equative sentences. The agreement facts show that there are no inverted equatives, that is to say, equative sentences in which the second argument of the equation function is fronted, as predicates are fronted. We might ask, then, whether this gap in the paradigm is language particular or follows from properties of UG. To answer this question, we must look at other languages. A crucial case turns out to be Italian, where the facts are just different enough from English to be interesting.

Compare the English sentences in (41) with their Italian counterparts in (42):

(41) a. I am the King of France.

b. The King of France is me.

(42) a. (Io) sono il re della Francia.
(I) am the king of France
I am the king of France.

b. Il re della Francia sono io.
the king of France am I
The king of France is me.

The canonical order (a) sentences are exactly parallel but the (b) sentences show the opposite patterns of agreement. We have claimed that the English (41) and sentences like it are equative; and Moro claims that the Italian (42) and its ilk are inverted predications, an analysis that is certainly suggested by the agreement pattern and case marking on the pronoun. At least partly in the pursuit of theoretical simplicity, Moro has further claimed that the English example, despite its agreement pattern and the case marking on the pronoun, is an inverted sentence. This latter claim our evidence has undermined; what are we then to make of the Italian case in (42b)?

5.1.1 Predicate inversion in Italian

Given the agreement pattern in (42), one obvious move would be to propose that the Italian example in (42b) is not in fact parallel to its purported English "counterpart" (41b), but rather that it *does* involve predicate inversion: that is, *il re della Francia* originates as the predicate of a small clause, as proposed by Moro for both the English and the Italian case. There are however reasons to reject this proposal.

First, the constraints on what kind of element can occur in the precopular position in Italian appear to mirror exactly the constraints that we discovered in English: that is, adjectives and non-specific indefinites cannot occur freely in this position. In the English case we argued (Section 3.5) that this constraint demonstrated that the predicate of a small clause cannot in fact move past its subject into the Spec(IP) position; the only cases that are grammatical are those that can be interpreted as equatives. But this argument should then also hold for Italian.

Second, the point just made is strengthened considerably by the observation that Italian *does* have the type of predicate fronting that we have seen for English (Section 5.1)—and it behaves in the same way in contrasting with the construction in (42b), in all respects except agreement:

1. **Binding of pronouns**: As we saw in the English examples in (35), in clear cases of predicate fronting a pronoun in the fronted predicate can be bound by a postcopular quantified noun phrase, as is typical of A-bar movement. The same phenomenon can be observed in Italian, as exemplified in (43):

(43) a. Ogni paese nell'Europa dell'Est era il nemico del
every country in-the-Europe of-the-East was the enemy of-the
proprio vicino.
own neighbor
Every country$_i$ in Eastern Europe was the enemy of its$_i$ neighbor.

b. *Il nemico del proprio vicino era ogni paese nell'Europa
the enemy of own neighbor was every country in-the-Europe
dell'Est.
of-the-East
The enemy of its$_i$ neighbor was [every country in Eastern Europe]$_i$.

c. Alla fine del 19-esimo secolo il Giappone divenne una
at-the end of-the 19th century the Japan became a
minaccia per i propri vicini. Una minaccia per i propri
menace for the own neighbors a menace for the own
vicini era anche ogni paese nell'Europa dell'Est.
neighbors was also every country in-the-Europe of-the-East
At the end of the nineteenth centry Japan became a threat to its neighbors. Also a threat to its$_i$ neighbors was every country$_i$ in Eastern Europe

2. **Embedded contexts:** Just as in English, the construction in (42b) shows no subordinate/main clause asymmetry, while the the predicate-fronting construction does:

(44) a. Se tu sarai il vincitore, ne sarò lieto.
if you are the winner of-it will-be glad.
If you are the winner, I'll be delighted.

b. Se il vincitore sarai tu, ne sarò lieto.
if the winner are you of-it will-be glad.
If the winner is you, I'll be delighted.

(45) a. Se gli affreschi di Giotto sono pure imponenti, noi rimaniamo.
if the frescos of Giotto are also impressive we will-stay
If the frescos by Giotto are also impressive, we'll stay on.

b. ?? Se pure imponenti sono gli affreschi di Giotto, noi rimaniamo.
if also impressive are the frescos of Giotto we will-stay
If also impressive are the frescos by Giotto, we'll stay on.

Again exactly as in English, and exactly as expected if the construction in (45b) involves A-bar movement to Spec(CP), the asymmetry disappears in contexts where CP-recursion can occur:

(46) a. Penso che gli affreschi di Giotto siano imponenti.
think that the frescos of Giotto are impressive
I think that the frescos by Giotto are impressive.

b. Penso che pure imponenti sono gli affreschi di Giotto.
think that also impressive are the frescos of Giotto
I think that also impressive are the frescos by Giotto.

We conclude that predicate fronting does exist in Italian, but that it contrasts with the construction in (42b), leaving us to search elsewhere for an analysis of the latter.

5.1.2 Equative inversion

Given that we cannot analyze the Italian example (42b) as predicate inversion, and also given that it shares many properties with the English example in (41b) which we have analyzed as an uninverted equative, we might attempt to make Moro's move of assimilating the English and Italian examples, but in the other direction, and claim that (42b) is an uninverted equative, despite the agreement pattern and case marking on the pronoun. However, while it would certainly be possible to design a system of case marking and agreement that would allow this analysis, the move seems implausible. This intuition is strengthened by the following striking set of data.

In English, we find a clear contrast in the acceptability of the examples in (47)–(48). If the antecedent is an equative sentence, then the subject of the consequent may be coreferential with the subject of the antecedent and produce a natural continuation, as in the (a) examples. If, however, the subject of the consequent is coreferential with the postcopular noun phrase in the antecedent, the resulting sentence is infelicitous, as in the (b) examples:

(47) a. If I were the king of France, I would be rich.

b. # If I were the king of France, he would be rich.

(48) a. If the king of France were me, he would be poor.

b. # If the king of France were me, I would be poor.

In Italian, there is also an asymmetry in interpretation. In canonical order sentences, the asymmetry is identical to the one found in English:

(49) a. Se (io) fossi il re della Francia, sarei rico.
if (I) were-1s the king of France would-be(1s) rich
If I were the king of France, I would be rich.

b. # Se (io) fossi il re della Francia, sarebbe rico.
if (I) were-1s the king of France would-be(3s) rich
If I were the king of France, he would be rich.

By contrast, in the cases Moro calls inverted, the natural example has the subject of the consequent coreferential with the *postcopular* noun phrase:

(50) a. Se il re della Francia fossi io, sarei rico.
if the king of France were(1s) I would-be(1s) rich
If I were the king of France, I would be rich.

b. # Se il re della Francia fossi io, sarebbe rico.
if the king of France were(1s) I would-be(3s) rich
If I were the king of France, he would be rich.

This pattern suggests that in Italian examples like (50) the postcopular noun phrase is the grammatical subject, as Moro claimed.

For at least some speakers of Italian, there *are* Italian examples that parallel the English ones in both word order and interpretation of the consequent clause:[6]

[6] All our informants agree that the option of having a canonical order equative in which the postcopular, accusative-marked noun phrase is a pronoun is significantly worse in main clauses than in subordinate clauses. Some reject this pattern in main clauses outright, others consider it merely degraded. We speculate that this type of canonical order equative may be stigmatized in the standard language.

(51) a. Se il re della Francia fosse me, sarebbe povero.
if the king of France were(3s) me would-be(3s) poor
If the king of France were me, he would be poor.

b. # Se il re della Francia fosse me, sarei povero.
if the king of France were(3s) me would-be(1s) poor
If the king of France were me, I would be poor.

In these examples, which are non-standard in flavor, agreement follows the English rather than the standard Italian pattern. The data in (49)–(51), taken as a whole, argue that agreement in Italian is a reliable indicator of subject status. We must therefore conclude that in our original example (42b), just as in (50a,b), the postcopular noun phrase is in fact the subject of the clause, hence that the clause is inverted.

At this point, we have reached the following conclusions about Italian examples like (42b):

1. These sentences are not examples of predicate inversion.

2. These sentences are not examples of canonical order equatives.

3. The subject of these sentences is the postcopular noun phrase

We are, therefore, led to the following hypothesis: examples like (42b) and (50a,b) in Italian are the case that has been missing so far: they are inverted equatives. The fact that they are equatives explains why the initial noun phrase is subject to the same kind of constraints as the initial noun phrase in the (canonical order) English equatives; the fact that they are inverted explains why the agreement is with the postcopular noun phrase.

5.1.3 The nature of equative inversion.

Having proposed that examples like (42b) are inverted, we are left with the obvious question of why this construction occurs in Italian but not in English. And having concluded that the word order in these examples is not due to predicate inversion, we need a mechanism for generating the inverted order. Since whatever mechanism we propose to handle the Italian case must be prevented from applying to English, these two issues are inextricably related.

Ideally the solution to our problems should follow from an independently attested difference or differences between the two languages. Indeed, when we compare the structure of simple clauses in Italian to the structure of corresponding English clauses, the most striking difference we find is in the position of the subject. In English, the subject always appears in Spec(IP), hence preverbally. But in Italian the subject is often lower in the structure, and postverbal (Burzio 1986):

(52) a. John arrives.

b. Arriva Giovanni.
arrives Giovanni
Giovanni arrives.

The obvious conclusion is that the subject in an inverted equative sentence in Italian occupies the same postverbal position as the subject in sentences like (52b). Indeed, we find that in copular sentences both noun phrases may occur after the copula, an order ruled out in English:

(53) Se fossi io il re della Francia ...
if were(1s) I the king of France
If I were the king of France ...

At this point we have an answer to the question of why English doesn't allow inverted equatives: in English the feature content of Infl is such as to force movement of the subject to Spec(IP), a preverbal position.

What now remains to explain is the leftward movement of the noun phrase *il re della Francia* in (42b), and the failure of such movement in English. Suppose that we take this movement to be an instance of scrambling. As we have seen, this movement cannot affect predicates—the only way that predicates move leftward is by the type of A-bar movement that we have already discussed, which has quite distinct properties. It is a known fact about scrambling that it essentially only applies to definite noun phrase arguments; just the type of expression that is moving in these inverted equatives.

Further, a scrambling analysis can offer some insight into the following curious gap in the paradigm. We have analyzed example (42b), repeated here as (54), as involving scrambling of the second noun phrase in an equative small clause past the (unmoved) subject:

(54) Il re della Francia sono io.
the king of France am I
The king of France is me.

We have also indicated that some of our informants also accept the type of canonical order equative in (55):

(55) Il re della Francia è me.
the king of France is me
The king of France is me.

We would then expect to find an inverted version of (55); even those informants who allow (55), however, reject (56):

(56) * Me è il re della Francia.
me is the king of France
The king of France is me.

Note, however, that the independent pronoun *me* is a tonic pronoun. It is a general fact about scrambling that it does not affect stressed elements, but rather correlates with destressing. Given than a tonic pronoun cannot be destressed, this conflict can at least begin to explain the ungrammaticality of (56) for all speakers.

Unfortunately, the analyses of scrambling that are available do not make entirely clear the relation between scrambling and standard cases of A or A-bar movement. So we cannot rely on established theory to explain why scrambling is possible in Italian but not in English. Note that if scrambling were possible in English we would expect to find examples like (57):

(57) ?? The king of France that man is.

While this word order is marginally possible in English, it arises out of A-bar movement of the postcopular noun phrase, not via scrambling. as can be shown by the ungrammaticality of (58):

(58) * ... because that man the king of France is

6 Conclusion

In summary: we have argued in this paper that copular sentences can be either predicative or equative, and that the latter cannot be reduced to an inverted version of the former. We have, however, claimed that this distinction should not be attributed to any lexical ambiguity in the copula itself, but rather to the existence of two types of small clause, both of which can occur as complements to the copula (as well as to some other heads). Inversion, in the sense of movment of the second element in a small clause past the subject of that small clause, does however occur. In the case of predicative small clauses, the only way that inversion can arise is through A-bar movement of the predicate to a position higher than Spec(IP)—presumably Spec(CP). This kind of predicate fronting we have seen in both English and Italian. Inversion out of equative small clauses also occurs, but this is only possible if the subject of the small clause is not forced to move (as is true in Italian) and if the language allows the operation of scrambling.

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'Pseudosluicing': Elliptical clefts in Japanese and English

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This paper examines apparent cases of sluicing in Japanese and concludes that these do not instantiate sluicing as found in English, but rather a kind of reduced cleft in which the pivot is a wh-phrase. An attempt to extend this analysis to English sluicing is shown to encounter severe difficulties. Finally, the structure of the cleft in English is considered, where it is argued that the cleft is a CP complement to *be* with the pivot adjoined; a number of correct predictions are shown to follow from this analysis.

1 Introduction

The primary question which this paper seeks to answer is the following: When is a sluice not a sluice? Sluicing is an elliptical construction in which the sentential part of a constituent question is missing, as illustrated in (1) for English and Japanese.

(1) a. Abby saw someone, but I don't know who.
b. Abby-ga dareka -o mi-ta ga, watashi-wa dare ka wakaranai.
A *-nom* someone-*acc* see-*past* but I *-top* who Q know.not

As is always the case in analyzing elliptical structures, it is a non-trivial task to determine what the structure of the missing material is. Two proposals will engage our attention here. The first, following the majority of work on sluicing in English, considers the missing IP source of the wh-phrase to be identical in all relevant respects to some antecedent IP in the discourse—in (1), the first conjunct. This IP is supplied either at the level of interpretation by some interpretative mechanism which copies in the content, or is deleted in the phonology under an identity relation which is established at the level of interpretation. In either case, then, the elided material will resemble the struck-through text in (2):

(2) I don't know who [~~Abby saw {someone / __}~~]. **sluice**

The second proposal considers the source of the ellipsis not to consist necessarily of full sentential material, but rather to have the structure of a cleft whose pivot is an extracted wh-phrase, as in (3). This type of ellipsis I will call 'pseudosluicing', as it gives rise to structures seemingly indistinguishable from sluicing as in (2).

(3) I don't know who [~~it was __ (that Abby saw)~~]. **pseudosluice**

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Both derivations, in other words, potentially give rise to structures like (1). In the following sections, I develop a number of diagnostics to distinguish the two, and argue that what appears to be sluicing in Japanese as in (1b) is in fact pseudosluicing, following much recent literature on this subject. In English, on the other hand, structures like (1a) are true sluicing constructions corresponding to derivations like (2); pseudosluicing does not exist in English.

2 Background on sluicing

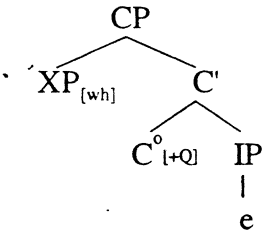
Sluicing has been the subject of a number of studies, mostly syntactic, since Ross's original investigation of the domain (Ross 1969, Rosen 1976, Levin 1982, Chao 1987, Lobeck 1991, 1995, Chung, Ladusaw, and McCloskey 1995, Ramos-Santa Cruz 1996, Romero 1997, among others). Here I will not provide a systematic overview of the various analyses that have been proposed, since for the most part, the exact details of these will be irrelevant for the points to be made here. Instead, I will limit myself to a brief exemplification of two of the distinctive properties of sluicing that will play some role in the argumentation in the following sections.

Examples of sluicing are given in (4); the wh-XP, embedded or not, can be of almost any type that occurs in non-elliptical questions.

(4) a. Jack bought a flag, but I don't know {where/how/why/when/for who(m) / on what day}.
b. Abby bought something, though it's unclear what.
c. Mark baked a cake for someone—guess for who!
d. A: She's shouting out the window.
B: Really? Who to?

I will assume the following structure for sluicing, which is parallel to non-elliptical interrogative structures, differing only in that the IP is elided. This is the strcuture most researchers have defended or assumed for sluicing (see however Ginzburg 1992 for a differing view).

(5)



The syntax of (5) follows the general pattern of the syntax of ellipsis, following Chao 1987, Lobeck 1991, 1995, Saito and Murasugi 1990, among others (see Potsdam 1997 for references and discussion). Under this view, adopted here as well, the ellipsis site is an empty category in the syntax, licensed by an appropriate (agreeing) head. In sluicing in particular, the wh-XP in SpecCP agrees with C°, allowing this C° to license the empty IP. This analysis is designed to account for the general contrast between the constituent wh (agreeing) complementizer (null in English), which licenses the elliptical IP, and non-agreeing complementizers (the polar C° and the declarative C°), which do not license such ellipsis, as illustrated in (6). (But cf. Giannakidou and Merchant (to appear) for a complication in this picture, which we will ignore here for simplicity.)

(6) The Pentagon leaked that it would close the Presidio, but ...
a. no-one knew for sure when.
b. *no-one knew for sure {whether / if / that}.

Under this conception, the resolution of the ellipsis is effected at LF by copying in an appropriate antecedent (here, an IP). See Chung et al. 1995 for details with respect to sluicing, and also Reinhart 1991 and Hazout 1995 for IP-copy in other constructions.

The second feature of sluicing that will be of relevance to us here is its apparent insensitivity to strong (syntactic) islands, as first noted by Ross himself. Sluicing of arguments with overt antecedents (usually indefinites) can apparently cross islands, as (7) through (11) demonstrate.

(7) Max said he'd leave if somebody from his class shows up, but I can't remember who.
(8) He'd like to find journal entries that describe a certain sea battle—guess which!
(9) Taroo is angry because Hanako bought something, but he wouldn't say what.
(10) Sandy was trying to work out which students would be able to solve a certain problem, but she wouldn't tell us which one. [Chung et al. 1995:(79a)]
(11) That certain countries would vote against the resolution has been widely reported, but I'm not sure which ones. [Chung et al. 1995:(79b)]

These contrast starkly with their unelided counterparts, given in (12)-(16). This is one of the strongest arguments for taking the resolution of ellipsis in sluicing to be the result of an LF-copying mechanism (or equivalent interpretative mechanism), and not that of PF-deletion. If ellipsis were simply PF-deletion, and island violations are a result of syntactic (pre-Spell-out) movement, the examples of sluicing in (7)-(11) should be as degraded as their non-elliptical counterparts as in (12)-(16).

(12) *I can't remember who Max said he'd leave if __ shows up
(13) *Guess which he'd like to find journal entries that describe __.!
(14) *But he wouldn't say what he is angry because Hanako bought __.
(15) *Sandy wouldn't tell us which problem she was trying to work out which students would be able to solve__.
(16) *I'm not sure which countries that __ would vote against the resolution has been widely reported.

Keeping these features of sluicing in mind, let us now turn to the question of sluicing in Japanese.

3 (Pseudo)sluicing in Japanese

The existence of a sluicing-like construction in Japanese was first noticed by Inoue 1976, 1978, who gave examples like that in (17).

(17) Dareka-ga sono hon-o yon-da ga, watashi-wa dare ka wakaranai.
someone-*nom* that book-*acc* read-*past* but, I-*top* who Q know.not
'Someone read that book, but I don't know who.'

This section reviews recent arguments for and against treating such examples on a par with English sluicing, and concludes that the evidence tells heavily in favor in analyzing these as pseudosluices.

3.1 Overt wh-movement in Japanese?

Takahashi 1993, 1994 assumes a PF-deletion approach to sluicing, and argues that examples like (17) instantiate a kind of overt wh-movement in Japanese—normally a typical wh-in-situ language—, drawing a parallel to scrambling of wh-XPs in general. In other words, 'scrambling' of a wh-XP to SpecCP counts as wh-movement. Under this analysis, the sluiced clause will have the structure in (18), as we saw above, fully equivalent to their English counterparts on the standard analysis.

(18) The sluiced CP = ... [$_{CP}$ dare$_1$ [$_{IP}$ ~~t_1 sono hon o yon da~~] ka]
who that book-*acc* read-*past* Q
'... who read that book.'

If this assimilation to English sluicing is correct, we expect at least the following two points to hold. First, all structures of the elliptical form in (17) should pattern with wh-agreeing English-type sluicing (cf. (6)). Second, there should obviously be no viable alternative derivation for (17), since the only real motivation for positing overt movement to SpecCP, which is apparently otherwise unattested in Japanese, is to account for these structures (see Nishiyama et al. 1996 for arguments that wh-scrambling involves adjunction to IP, not substitution into SpecCP). Unfortunately, as we will see below, neither of these points goes through.

3.2 Wh-XPs stay put: The 'sluice' is a pseudosluice

Responding to Takahashi's analysis, a number of authors (Shimoyama 1995, Kuwabara 1996, Nishiyama et al. 1996, Kizu 1997) have independently proposed to account for structures like (17) as a kind of reduced cleft. I will call such a reduced clefts a pseudosluice, defined extensionally in (19).

(19) Pseudosluice =$_{def}$ An elliptical construction that resembles a sluice in having only a wh-XP as remnant, but has the structure of a cleft, not of a regular embedded question.

For the Japanese example above, then, the proposed structure is as in (20).

(20) The sluiced CP = ... [$_{CP}$ [$_{IP}$ *pro* dare ~~da/de aru~~] ka]
who be-*pres* Q
'... who it is.'

The two salient features of Japanese that led to the confusion of true sluicing with pseudosluicing are the following: first, Japanese is a null-subject (hence null-expletive) language, and second, Japanese allows optionally for omission of the copula in embedded sentences. The exact analysis of these two properties is not relevant here, and I will assume for expositional purposes that both null expletives and the null copula are given in the lexicon, though nothing hinges on these assumptions.

The main prediction of this approach is simple: we expect that the restrictions on a wh-pivot of a cleft will be the same as on the wh-XP in Japanese 'sluices' (i.e., pseudosluices). The greater part of the work of Shimoyama 1995, Kuwabara 1996, Nishiyama et al. 1996, and Kizu 1997 is devoted to showing that this prediction is correct. After a brief review of clefts in Japanese, we turn to a presentation of these authors' evidence.

3.3 Some background on Japanese clefts

Let me begin by introducing a piece of descriptive terminology which will be useful in discussing clefts (and pseudoclefts, though these will not figure in the discussion here), given in (21):

(21) pivot $=_{def}$ The XP in 1. clefts: *it* ... *be* XP [relative clause (-like constituent)]
2. pseudoclefts: [Free relative (-like constituent)] *be* XP

The term *pivot* is meant to be neutral with respect to the question whether the XP in clefts and pseudoclefts is necessarily a focus, or the like, and is also meant to apply regardless of surface word order (since the XP in both clefts and pseudoclefts may be displaced to some extent). This will spare us awkward locutions like 'the post-copular DP/PP/etc.', which wouldn't properly generalize to languages like Japanese in any case.

What are called clefts in Japanese have the structure given schematically in (22), where __ indicates a gap, NM marks the nominalizing complementizer *-no* (see Kuno 1973, McCawley 1978, Horie 1997), *-wa* is the topic marker (sometimes the nominative marker *-ga* is found instead, though we will not consider such cases here), and *da* is the present tense copula (other forms are found as well). The pivot may be a DP or a PP.

(22) $[_{CP}\ [_{IP}$ ... __ ...]-no]-wa [*pivot*] da
NM *top* copula

Most of the properties of clefts in Japanese will not concern us here (see Hoji 1990, Inoue 1976, and section 5 for discussion of the structure of clefts). For our purposes, only two properties will be relevant: the status of case-markers on pivots and the fact that clefts in Japanese, as in English, show island sensitivity.

Although the case markers *-ga* (nom), *-o* (acc), and *-ni* (dat) are not necessarily omitted in Japanese (though especially *-o* is frequently dropped in colloquial speech), there is a very strong preference to omit them when the nominal to which they would be expected to attach is the pivot of a cleft. This restriction is illustrated in the following examples:

(23) a. Bungo-ni Aya-o syookaisita no-wa [Kota-(*ga)] da.
b. Kota-ga Bungo-ni syookaisita no-wa [Aya-(??o)] da.
c. Kota-ga Aya-o syookaisita no-wa [Bungo-(?ni)] da.
K-*nom* A-*acc* introduced C-*top* B-*dat* is
'It's [X] that Kota introduced Aya to Bungo.'

There is some variability among speakers in judging the acceptability of case-markers on pivots, and this variability is also attested in the literature. My informants rejected *-ga* and *-o* on pivots, but were less sure concerning *-ni*. This corresponds closely to the data reported in Nishiyama et al. 1996, who mark *-ga* and *-o* on the pivot with *, and argumental *-ni* with ? (their (19)). Hoji 1990 gives examples without a case marker as grammatical, and Kizu 1997 marks *-o* with ?? (her (11)). Shimoyama 1995 sometimes marks *-o* as fine (her (9) and (10)), though she does note that pivots "with structural Case markers sound somewhat marginal in clefts" (fn. 5, p. 16), following the judgments of Inoue 1976, and gives examples with *-ga* marked ?? and with *-o* marked ?. The generalization which I will extract from this discussion is simply the following: Japanese pivots marked with the case markers *-ga* or *-o* are highly degraded. Since there is some variation with respect to *-ni*, possibly reflecting structural vs. 'inherent' status, I will avoid examples containing *-ni*.

The second property of clefts in Japanese which will be relevant for our discussion is the fact that they, like their English counterparts, show the typical island sensitivities of unbounded dependencies. This is illustrated by the following data, showing illicit extraction from a relative clause, a temporal adjunct, and a clausal complement to a noun, respectively.

(24) *[$_{CP}$ Hanako-ga [$_{DP}$ [$_{CP}$ t_i Taroo-ni ageta] hito]-ni atta no]-wa kuruma$_i$ da.
H-*nom* T-*dat* gave guy-*dat* met C *top* car is
lit. 'It's a/the car that Hanako met the guy who gave Taroo __.'

(25) *[$_{CP}$ Hanako-ga [$_{DP}$ [$_{CP}$ Taroo-ga t_i katta atode] okotteiru no]-wa kuruma$_i$ da.
H-*nom* T-*nom* bought after is.angry C *top* car is
lit. 'It's a/the car that Hanako is angry after Taroo bought __.'

(26) *[$_{CP}$ Taroo-ga [$_{DP}$ [$_{CP}$ Hanako-ga t_i katta toyuu] uwasa]-o sinjiteiru no]-wa
T-*nom* H-*nom* bought C rumor-*acc* believe C *top*
kuruma$_i$ da.
car is
lit. 'It's a/the car that Taroo believed the rumor that Hanako bought __.'

A final question that we may ask before proceeding concerns the appropriateness of assimilating these structures in Japanese to English cleft-like structures, as is done without exception in the literature cited. After all, what we seem to be dealing with is a nominalized clause containing a gap, which is topic or case-marked as regular DPs are in Japanese (as opposed to relative clauses, for example, which do not permit such marking). Such a structure would seem to be much more closely parallel to the English pseudocleft than to a cleft. While an extensive comparison of the properties of English clefts and pseudoclefts with the Japanese cleft construction is beyond the scope of this paper, I will draw attention to one interesting fact which supports the traditional consensus and weighs against equating the Japanese cleft with the English pseudocleft. Unlike the pivot of clefts, which can easily be a wh-phrase, the pivot of a pseudocleft cannot be questioned, as the following data show (see Heggie 1988 and Heycock and Kroch 1997 for some discussion of this fact).

(27) a. [What Ben is] is proud of himself.
b. *What is [what Ben is]?
(28) a. ?[Who Ben met] was the director of the institute.
b. *{Who/which director} was [who Ben met]?
(29) a. What those brats did was all get in the tub at once. [Hankamer 1974]
b. *I wonder what [what those brats did] was.

There is no difficulty, on the other hand, in wh-extracting the pivot of a cleft:

(30) a. What is it that Ben is?
b. {Who/Which director} was it {that/?who} Ben met?
c. I wonder what it was that those brats did.

Japanese clefts pattern with English clefts in this regard, allowing wh-pivots, as demonstrated by the following examples.

(31) a. Sono hon- o yon-da- no- wa dare desu ka?
that book-*acc* read-past-NM-*top* who is Q
'Who was it that read that book?'

b. Jon-ga kubinisita-no- ga dare desu ka?
Jon-*nom* fired -NM-*nom* who is Q
'Who is it that Jon fired?'

Obviously, if Japanese clefts were actually counterparts to English pseudoclefts, this non-parallel would be quite surprising.

With this brief background on Japanese clefts, let us return to the behavior of 'sluicing'.

3.4 Parallels between clefts and pseudosluicing: Case-markers and islands

The two properties discussed above with respect to clefts in Japanese—resistance to case-markers on the pivot and island sensitivity—are equally attested in 'sluicing' constructions. This of course is direct evidence that we are not dealing with sluicing, but rather with pseudosluicing.

First, note that the restrictions on case-markers in clefts are operative in pseudosluices as well (cf. (23)), as Nishiyama et al. 1996 and Kizu 1997 show:

(32) Dareka-ga sono hon-o yon-da ga, watashi-wa dare(*-ga) ka
someone-*nom* that book-*acc* read-*past* but, I-*top* who-*nom* Q
wakaranai.
know.not
'Someone read that book, but I don't know who.'

(33) Taroo-ga dareka-o nagutta ga, watashi-wa dare(??-o) ka wakaranai.
T-*nom* someone-*acc* hit but I-*top* who-*acc* Q know.not
'Taroo hit someone, but I don't know who.' [Kizu 1997: (11a)]

In fact, as Kizu 1997 points out, wh-scrambling actually *requires* the case-marker, which is quite damning for a Takahashi-style analysis which assimilates 'sluicing' in Japanese to wh-scrambling followed by PF-deletion of the IP.

(34) ... watashi-wa [dare*(-o)$_i$ [$_{IP}$ Taroo-ga t$_i$ nagutta] ka] wakaranai.
I-*top* who-*acc* T-*nom* hit Q know.not
'... I don't know who Taroo hit.' [Kizu 1997: (11c)]

Second, pseudosluices *are* sensitive to islands, like clefts and unlike English sluicing. The data below are Kizu 1997's (22a), (23a), and (21a), respectively. Shimoyama 1995 discusses equivalent facts.

(35) *Taroo-ga [Hanako-ga nanika-o katta kara] okotteiru rasii ga,
T-*nom* H-*nom* something-*acc* bought because is-angry seems but
watashi-wa nani ka siranai.
I-*top* what Q know.not
'It seems that Taroo is angry because Hanako bought something, but I don't know what.'

(36) *Hanako-ga [Taroo-ni nanika-o ageta hito] -ni atta sooda ga,
H-*nom* T-*dat* something-*acc* gave person-*dat* met I.heard but
watashi-wa nani ka siranai.
I-*top* what Q know.not
'I heard that Hanako met a person who gave Taroo something, but I don't know what.'

(37) *Taroo-ga [Hanako-ga nanika-o katta toyuu uwasa]-o sinjiteiru ga,
T-*nom* H-*nom* something-*acc* bought C rumor-*acc* believe but
watashi-wa nani ka siranai.
I-*top* what Q know.not
'Taroo believes the rumor that Hanako bought something, but I don't know what.'

These facts would be extremely surprising under the approach to sluicing adopted here, where the resolution of ellipsis occurs at LF, especially since it is well known that Japanese wh-movement at LF in Japanese is not subject to subjacency (Nishigauchi 1990). Under the pseudosluicing approach advocated here, however, the ungrammaticality of these examples reduces to the fact that clefts in Japanese *do* exhibit subjacency effects. This also entails, as a side consequence which we will not pursue here, that the ellipsis of the non-pivot of the cleft (the 'presuppositional' part) is not sufficient to overcome island violations in the syntax.

3.5 Further support for pseudosluicing

This section addresses two further points in the analysis of pseudosluicing as understood here: the nature of the ellipsis licensing condition, and the absence of the copula.

3.5.1 'Sluices' with non-agreeing complementizers

As noted in section 3.1 above, if Takahashi 1994's assimilation of Japanese 'sluicing' to its English cousin were correct, we would expect that the licensing conditions on sluicing-style ellipsis identified in Lobeck 1991, 1995 should hold in Japanese as well. Recall that only wh- (agreeing) complementizers license the ellipsis of their IP complements (see (6a) above). If this were the case in Japanese as well, we expect to find that non-agreeing complementizers as in (6b) do not license elliptical IP complements. As noted by Shimoyama 1995 and Kizu 1997, this prediction is false. The data here are adapted from Shimoyama's (6b,c) (my informants marked the *-o* marker on the pivot as highly degraded).

(38) John-ga dareka-o kubinisita rasii kedo, boku-wa Bill-(??o) ka dooka siranai.
J-*nom* someone-*acc* fired seem but, I-*top* B-*acc* whether know.not
'It seems that John fired someone, but I don't know whether (it was) Bill.'

(39) John-ga dareka-o kubinisita rasii kedo, boku-wa Bill-(??o) to omou.
J-*nom* someone-*acc* fired seem but, I-*top* B-*acc* that think
'It seems that John fired someone, and I think that (it was) Bill.'

Given these data, we can safely conclude that there is nothing special about the C[wh] in Japanese that licenses ellipsis, unlike its English counterpart.

3.5.2 Optional presence of the copula

Another point against Takahashi's analysis is that structures that seem completely parallel to his 'sluicing' examples, and to those in the previous section, allow the presence of a copula (and may in some cases require it). In other words, we must countenance the presence of another construction with essentially the same properties as 'sluicing', but with a completely different derivation. Shimoyama 1995, Nishiyama et al. 1996, and Kizu 1997 all give relevant data; (41) and (42) are adapted from Shimoyama's (6b,c).

(40) Dareka-ga sono hon-o yon-da ga, watashi-wa dare datta ka wakaranai.
someone-*nom* that book-*acc* read-*past* but, I-*top* who was Q know.not
'Someone read that book, but I don't know who it was.'

(41) John-ga dareka-o kubinisita rasii kedo, boku-wa Bill da ka dooka siranai.
J-*nom* someone-*acc* fired seem but, I-*top* B is whether know.not
'It seems that John fired someone, but I don't know whether it was Bill.'

(42) John-ga dareka-o kubinisita rasii kedo, boku-wa Bill da to omou.
J-*nom* someone-*acc* fired seem but, I-*top* B is that think
'It seems that John fired someone, and I think that it was Bill.'

Takahashi's account would of course be unaffected if it could be shown that the copula in such clauses cannot be absent. Unfortunately, just the opposite is the case: in embedded clauses in general, the copula can be absent:

(43) Boku-wa [[Motoko-no koibito-ga gakusei (da)] to] omou.
I-*top* M-*gen* boyfriend-*nom* student is C think
'I think that Motoko's boyfriend is a student.'

(44) Boku-wa [[Motoko-no koibito-ga dare (da)] ka] siranai.
I-*top* M-*gen* boyfriend-*nom* who is Q know.not
'I don't know who Motoko's boyfriend is.' [Shimoyama 1995:(12)]

But of course the copula is not permitted to 'mark' (co-occur with) an embedded question:

(45) Boku-wa dare-o Junko-ga aisiteiru (*da) ka wakaranai.
I-*top* who-*acc* J-*nom* love is Q know.not
'I don't know who Junko loves.' [Nishiyama et al. 1996:(12)]

This fact about the distribution of the copula makes a separate Takahashi-style sluicing analysis superfluous, since all the relevent structures can be reduced to other, known parts of Japanese grammar. This reduction of pseudosluicing to clefts with wh-pivots with concomittant copula-drop raises one further question with respect to other wh-in-situ languages, which we will not investigate here: In wh-in-situ languages without copula drop, is the copula obligatory in 'sluicing' structures? The initial results of Nishiyama et al. 1996 and Kizu 1997 for Korean, Chinese, and Turkish indicate a positive answer to this question.

The lack of true sluicing in wh-in-situ languages, if this is indeed so, seems to argue in favor of a PF-deletion approach to ellipsis. It would seem that the proponent of such an approach need only say that overt wh-movement is a precondition for the deletion of the remaining IP, though as noted above, the island ameliorations would still present a problem. As a proponent of the LF-copying approach, I would like to suggest that this simple conditional (sluicing only if overt wh-movement) is too simple. Instead, the same results can be derived from the Lobeck 1991, 1995 restrictions on licensing ellipsis sites (which in her theory are base-generated null categories); if it can be shown independently, as has often been argued for Japanese, that the necessary agreeing relations do not hold, we have an independent explanation for the lack of true sluicing in these languages. On the other side, there does appear to be at least one wh-in-situ language with true sluicing, Hindi, though space precludes a discussion here. For these reasons, I do not take the above discussion to necessarily favor a PF-deletion account of ellipsis over LF-copying.

In conclusion, we have seen that a substantial number of parallels exist between clefting structures and 'sluicing' (i.e., pseudosluicing) structures in Japanese (further

parallels are discussed especially by Kizu 1997: ordering of wh-DP and numeral quantifiers, multiple remnants, and concessive wh-phrases). These parallels cast serious doubt on the assimiliation of 'sluicing' structures in Japanese to their English counterparts defended in Takahashi 1994, and support the pseudosluicing analysis defended by Shimoyama 1995, Kuwabara 1996, Nishiyama et al. 1996, and Kizu 1997.

4 Wh-pivots in clefts: Can pseudosluicing be extended to English?

In this section, I will consider the obvious next question, posed in the title of this section: Can the reduction of sluicing to pseudosluicing defended above for Japanese be extended to English? The answer, we will see, is that it is highly unlikely that such a reduction is correct.

4.1 Initial considerations

Let us begin by clearing the way of a potential objection. There is nothing peculiar to Japanese which allows the ellipsis of the presuppositional (relative-clause-like) part of a cleft. Such ellipsis seems to be available in English as well (Büring 1997 concludes this as well). Compare the following pairs of questions and answers.

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

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

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

The nature of this 'ellipsis' is quite different from the head-licensed ellipsis generally discussed in the literature (NP-ellipsis, VP-ellipsis, IP-ellipsis), consisting as it does of a CP. Since the syntactic requirements on CP ellipsis will not be my concern here, I will limit myself to pointing out two other cases of CP ellipsis:

(48) a. A: They're late again. B: I know (that they're late again).
b. A: Will she come? B: I don't know (if she'll come).
(49) a. More people came than we thought (would come).
b. He's sicker than the doctor thought/expected/realized/admitted (that he was).

But even granting that English licenses ellipsis of CP, it is highly implausible to assume that the expletive *it* present in clefts and the copula could be missing, since these are not properties found in English (i.e., English is neither a *pro*-drop nor a null copula language). In other words, a proponent of such an approach would posit that the clefts in (46) above should be reduceable as in (50), contrary to fact.

(50) a. Q: Who knocked?
A: *(It was) {Alex / me} who knocked.

b. Q: What did they steal?
A: *(It was) the TV and stereo that they stole.
c. Q: Why is the bus late?
A: *(It's) because of the traffic that it's late.

In general, in fact, short ('fragment') answers do not have the same properties as pivots of clefts: they do not enforce exhausitivity the way the pivot of a cleft does, for example, nor do they have the same presuppositional properties. A cleft has a true existential presupposition (though see Prince 1978, Delin 1992 for some caveats to this blanket claim: new information can sometimes appear in the 'presuppositional' part, especially in performatives in clefts), whereas a question is typically assumed to have a conversational implicature (Karttunen and Peters 1975, 1976, etc.). This difference is illustrated here with negative quantifiers in answers, which are well-formed, while negative quantifiers in the pivot of clefts are not (since the assertion contradicts the presupposition).

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

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

These initial considerations cast doubt on any attempt to reduce sluicing to pseudosluicing. In the next section, I present five other differences which would seem mysterious under such a reduction.

4.2 Contra the equation 'English sluicing = pseudosluicing'

There are at least five differences between sluicing and cleft questions with wh-XP pivots. My goal here is not to offer explanations or analyses of these differences—my point is served simply by showing that they exist, since their very existence makes any assimilation of sluicing to clefts problematic. These differences concern the distinct behavior of sluices and wh-pivot clefts with respect to adjuncts and implicit arguments, prosody, agressively non-D-linked wh-phrases, 'mention-some' intepretations, and West Germanic R-pronoun inversion.

4.2.1 Adjuncts and implicit arguments

The first reason to keep sluicing and clefting distinct is provided by a simple comparison of the behavior of adjuncts and implicit arguments in these two constructions. As the data in (53) for adjuncts and that in (54) for implicit arguments show, sluicing with these is grammatical, but a wh-adjunct or implicit argument is highly degraded as a pivot of a bare cleft in English. (The cleft versions improve substantially if the presuppositional part of the cleft is retained, at the risk of prolixity. The significance of this fact is difficult to assess, however, lacking a better understanding of what makes wh-adjuncts and implicit arguments ungrammatical pivots in the first place.)

(53) a. He fixed the car, but I don't know how (*it was).
b. He fixed the car, but I don't know why (*it was).
c. He fixed the car, but I don't know when (*it was).
d. He's hidden the jewels, but I don't know where (*it is).
e. He served time in prison, but I don't know how long (*it was).

(54) a. They served the guests, but I don't know what (*it was).
b. He said they had already eaten, but I don't know what (*it was).
c. They were arguing, but I don't know about what (*it was).

4.2.2 Prosody

The second difference comes from the intonational contour associated with sluicing. Standard cases of sluicing require that the greatest pitch accent fall on the wh-phrase (this connects to the impossibility for so-called 'stress retraction' to occur in multisyllabic wh-phrases in German under sluicing, as discussed in Merchant 1996). In wh-pivot clefts, on the other hand, the pitch accent must fall on the copula, as the following contrasts show.

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

(56) a. Someone KISSED you, and you can't remember WHO?!?
b. Someone KISSED you, and you can't remember who it WAS?!?
c. *Someone KISSED you, and you can't remember WHO it was?!?

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

4.2.3 Agressively non-D-linked wh-phrases

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

(57) Someone dented my car last night –
a. I wish I knew who!
b. I wish I knew who the hell it was!
c. *I wish I knew who the hell!

The problem in (57c) is not with emphasis on *who the hell*, as the well-formedness of (58) demonstrates:

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

4.2.4 The 'mention-some' interpretation[1]

Because of the exhaustivity entailed by the pivot (see Kiss 1996), only a 'mention-all' interpretation (see Groenendijk and Stokhof 1997, sec. 6.2.3 for discussion) will be compatible with a wh-phrase in the pivot. Thus wh-pivots will be incompatible with modifiers like 'for example', which explicitly requires the 'mention-some' interpretation, in contrast to sluicing, which allows such modification. (59a) illustrates the contrast in embedded sluicing, and (59b) does so for a matrix sluice.

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

(59) A: You should talk to somebody in the legal department for help with that.
a. B1: Could you tell me who (*it is), for example?
b. B2: Who (*is it), for example?

4.2.5 West Germanic R-pronoun inversion

The final difference between sluicing and clefts comes from a somewhat intricate set of facts concerning West Germanic R-pronoun inversion. It is well-known that certain elements (known as 'R-pronouns' in the literature) can invert with a preposition, as illustrated in (60) and (61) for German:

(60) a. ?An was denkst du eigentlich? [German]
b. Wo-r-an denkst du eigentlich?
where-on think you actually
'What are you thinking of, anyway?'

(61) a. ?Nach was hat es gerochen? [German]
b. Wonach hat es gerochen?
where-after has it smelled
'What did it smell like?'

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

(62) a. She bought a robe, but God knows who for.
b. They were arguing, but we couldn't figure out what about.
c. This opera was written by someone in the 19th century, but we're not sure who by. [Chung et al 1995: (4d)]
d. He was shouting to someone, but it was impossible to tell who to.
e. A: She's going to leave her fortune to someone. B: Really? Who to?
f. He'll be at the Red Dragon, but I don't know when till.
g. She's driving, but God knows where to.

Like R-pronoun inversion in German and Dutch, this kind of inversion under sluicing is very restricted, though somewhat more liberal than the continental varieties of the phenomenon (see Hoekstra 1995 for a survey of the various continental dialects). In English, only certain 'minimal' wh-operators can invert: *who*, *what*, *when*, and *where* (these seem to be the same group of wh-words which can occur in wh-copying constructions in German and child English; cf. McDaniel et al. 1996). We should note here that whatever the correct account of this restriction, it is not simply a prosodic condition on inversion, as the examples with *which* demonstrate.

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

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

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

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

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

4.3 Summary

This section has presented a number of reasons to be skeptical of any attempt to reduce sluicing in English to a kind of pseudosluicing as in Japanese. In addition to syntactic difficulties in accounting for the missing copula and expletive *it*, and semantic differences with respect to exhaustivity and presuppositional behavior, I provided evidence from adjuncts and implicit arguments, prosody, agressively non-D-linked wh-phrases, 'mention-some' intepretations, and West Germanic R-pronoun inversion to support the conclusion that wh-pivot clefts and sluices should be kept distinct.

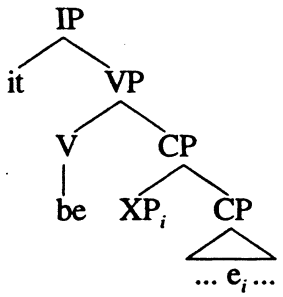
5 The structure of the English cleft

The subject matter and conclusions of this final section are in large part independent of the argumentation that has occupied us this far. Here, elliptical structures will no longer be our concern; rather, we will take a closer look at a part of the preceding analysis that has gone largely unremarked upon: the structure of the cleft itself. I will restrict myself to an examination of the English facts, as these are complex enough, and the cross-linguistic facts known to me are sometimes at odds with the English data.

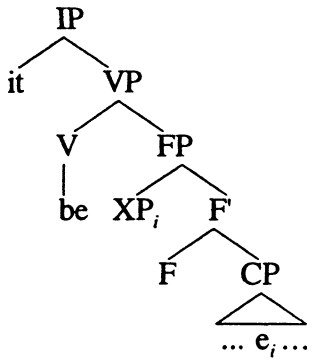
I will consider two possibilities for analyzing the English cleft here, which are substantially similar in most respects. In fact, it is quite difficult to find conclusive empirical evidence to decide between the two, though I will point out areas and data that seem prima facie problematic for the second option below. Most of the arguments presented here can be used in support of either option; this being the case, this section can be considered primarily as an extended argument for the substantial correctness of something like the structures given below, and against approaches which take the pivot and the relative-clause-like constituent (here the lowest CP) not to form a post-copular constituent (such as Percus 1996).

The two possibilities are given in (66) below, with XP as pivot. (66b) is based on Rizzi 1995, Kiss 1996, Meinunger 1996, and Svenonius 1997, where F = Focus for Rizzi, Kiss, and Meinunger.

(66) a. CP adjunction



b. Functional projection



Both options will need to distinguish between moved XPs and base-generated XPs, the former categorically variable, the latter only DPs—corresponding to Pinkham and Hankamer's (1975) split between shallow [=moved] and deep [=base-generated] clefts. Though the internal structure of the CP under either account is of considerable intrinsic interest (see Svenonius 1997 for discussion and references), I will be concerned here only with the properties of the clausal structure above the lowest CP.

Note that (66b) represents a minor deviation from Kiss 1996, with *be* selecting the FP, not heading it. This correction solves the problem of auxiliary placement, as seen in (67) (assuming that *be* in F would be unable to move higher because of the presence of the other auxiliaries.

(67) a. It might have been Andrew they were talking about.
b. *It might have Andrew been they were talking about.

In the next sections, I consider the ramifications of these structures for two of the well-known properties of the clefts: the presence of the expletive *it* and the copula *be*. I then present some evidence that the pivot behaves as an adjoined element, motivating the CP-adjunction analysis. Finally, the exhaustivity of the pivot is contrasted with the semantics of *only*, supporting the conclusion that the semantics of the pivot and *only* are distinct.

5.1 The expletive

Most recent analyses of the cleft in English recognize that the *it* that appears in the matrix subject position is the 'extraposition' *it* that associates with CPs in general (one exception is Percus 1996, who derives *it* from an English-specific phonological rule that obligatorily realizes the string 'the Ø (one) t_{CP}' in subject position as *it*; this solution obviously lacks cross-linguistic application).

(68) It is {clear/surprising/obvious/unlikely/true} [$_{CP}$ that Bob passed].

While this fact follows directly from the structure in (66a), some additional assumptions are required to ensure that this *it* can associate properly ('anchor' in Svenonius 1994's terms) with the FP of (66b), though these assumptions are not necessarily pernicious.

A number of correct predictions arise from this analysis. First, we predict that only singular agreement will occur on *be*, regardless of the number of the pivot or of the CPs, as McCloskey 1991 shows for CP associates in general. Compare the coordinated CP associates under *be* and *seem* in (69) with the plural pivot in (70), the coordinated pivot in (71), and the coordinated pivot+CP constituents in (72).

(69) a. It {is/*are} clear [that the fires started here] and [that they spread south].
b. It {seems/*seem} (clear) [that the fires started here] and [that they spread south].

(70) a. It {is/*are} the Jets that started the rumble.
b. It {seems/*seem}to be the Jets that started the rumble.

(71) a. It {is/*are} Billy and Suzy who can't control themselves.
b. It {seems/*seem}to be Billy and Suzy who can't control themselves.

(72) a. It {was/*were} [Ben who baked the cookies] and [Abby who ate them].
b. It {was/*were} [Bill who made the mess] and [Bill who'll clean it up].
c. It wasn't [Betsy who caught the fish] {or/and} [Ed who made the salad].

The data in (72) are especially important, since they show that the pivot+CP acts as a single constituent, subject to coordination, as the structures in (66) predict. In particular, they are problematic for an analysis like Percus 1996, which doesn't take the pivot+CP to be constituent. The fact that the matrix negation in (72c) can take scope over the coordinators *or* (i.e., $\neg[\varphi \vee \psi]$[2]) and *and* (i.e., $\neg[\varphi \wedge \psi]$) shows that an analysis of these as some kind of forward conjunction reduction (along the lines of Hankamer 1971 among others; see Lakoff and Peters 1969 for pertinent criticism) cannot be correct.

Another problem for Percus 1996 are the following data, translations of McCloskey 1979:114's Irish data.

(73) a. They were looking for a leprechaun.
b. It was a leprechaun they were looking for. [both *de re* and *de dicto*]
c. The one they were looking for was a leprechaun. [only *de re*]

The indefinite in (73a) has both *de dicto* and *de re* readings. As McCloskey points out, both *de dicto* and *de re* readings survive under clefting. The putative source for (73b) under Percus's account—namely something semantically equivalent to (73c)—does not, however, have a *de dicto* reading. Further problems for his account (non-DP pivots, differences with respect to true relative clause extrapositon, etc.) are discussed by Cottell 1997.

If CPs can only be licensed by anchoring to the expletive *it* and not to the DP-expletive *there*, it is expected in particular under the structure in (66a) that *there* will not appear, even when the pivot is an appropriate associate for *there*. The data in (74) and (75) give the relevant contrast. Note that this also distinguishes the expletive in clefts from constructions like locative inversion.

(74) a. It's a madman that they're looking for!
b. It seems to be a madman they're looking for!
(75) a. *There's a madman that they're looking for!
b. *There seems to be a madman that they're looking for!

Similarly, a DP pivot is not a possible target for raising:

(76) a. *A madman is that they're looking for!
b. *A madman seems to be that they're looking for!

---

[2] In fact, wide scope for the disjunction is impossible here. This can also be seen clearly in the ungrammaticality of 'scope-marking' *either* appearing above negation (see Larson 1985):

(i) a. *Either it wasn't [Betsy who caught the fish] or [Ed who made the salad].
b. *It either wasn't [Betsy who caught the fish] or [Ed who made the salad].

In this regard, clefts differ from small clause complements to verbs like *regard (as), consider, call,* and the like: *Ben was called [$_{FP}$ __ an idiot].* Obviously, proponents of the structure in (66b) have the task of locating the relevant difference.

5.2 The CP complement to *be*

The CP complement to *be* (under the analysis of (66a)) has the same distribution as the CP complement to *seem*:

(77) a. It seems that Fred will resign.
b. *That Fred will resign seems.
(78) a. It was Max that we invited.
b. *That we invited was Max.
c. *Max that we invited was.

These have the structures given in (79) and (80), respectively. Neither segment of the CP complement to *be* can be fronted.

(79) a. It seems [$_{CP}$ that Fred will resign].
b. *[$_{CP}$ That Fred will resign]$_1$ seems t_1.
(80) a. It was [$_{CP}$ Max [$_{CP}$ that we invited]].
b. *[$_{CP}$ That we invited]$_1$ was [$_{CP}$ Max t_1].
c. *[$_{CP}$ Max [$_{CP}$ that we invited]]$_2$ was t_2.

I have nothing to add to the literature on this puzzling distribution (see Davies and Dubinsky 1995 for one approach and references); the point here is only to make plausible the phrase structure of (66a) by pointing out that it would not be unique in its c-selectional properties.

5.3 Evidence for the adjoined position of the pivot

This section presents two related kinds of data that support locating the pivot in a structural adjunct position: extraction of the pivot from weak islands, and extraction of a proper subpart of the pivot from the same environments. Surprisingly, we will see that all types of wh-phrases are sensitive to weak islands when extracted from the pivot position of a cleft.

5.3.1 Extraction of the pivot

Let us begin by giving a range of control cases. In (81) and (82) we see that the full range of wh-phrases can be pivots of clefts, and undergo wh-movement.

(81) a. What was it __ that the patient last ate?
b. Which vegetable was it __ that the patient last ate?
c. Who (the hell) was it __ that they were thinking of hiring?
d. Which candidate was it __ that you voted for in the last election?
e. How long was it __ that you spent in prison?
(82) a. When was it __ that the patient last ate?
b. Where was it __ that you found the victim?
c. Why was it __ that you quit your last job?
d. How was it __ that you managed to fix that disk drive?
e. How (the hell) long is it __ that you've been in Amsterdam?

Likewise, these wh-phrases can be extracted over bridge verbs:

(83) a. What did the chart indicate it was __ that the patient last ate?
b. Which vegetable did the chart indicate it was __ that the patient last ate?
c. Who did you say it was __ that that they were thinking of hiring?
d. Which candidate did he claim it was __ that he voted for in the last election?

(84) a. When did you say it was __ that the patient last ate?
b. Where did you think it was __ that you found the victim?
c. Why do you think it is __ that we're firing you?
d. How long did he say it's been __ that he's been in Amsterdam?

Rizzi 1994 (pp. 370-374) was the first to notice that extraction of *who* is impossible from negative clefts and from under *whether/if* clauses. The following data show that this effect is in fact completely widespread, and applies to extraction of all kinds of wh-phrases (not just *who*), from all kinds of weak islands.

Negation of the matrix cleft *be*:

(85) a. *What wasn't it __ that the patient last ate?
b. *Which vegetable wasn't it __ that the patient last ate?
c. *Who (the hell) wasn't it __ that they were thinking of hiring?
d. *Which candidate wasn't it __ that you voted for in the last election?
e. *How long wasn't it __ that you spent in prison?

(86) a. *When wasn't it __ that the patient last ate?
b. *Where wasn't it __ that you found the victim?
c. *Why wasn't it __ that you quit your last job?
d. *How wasn't it __ that you managed to fix that disk drive?
e. *How (the hell) long isn't it __ that you've been in Amsterdam?

Negation in a higher clause:

(87) a. *What didn't the chart indicate it was __ that the patient last ate?
b. *Which vegetable didn't the chart indicate it was __ that the patient last ate?

(88) a. *When didn't you say it was __ that the patient last ate?
b. *How long didn't he say it is __ that he's been in Amsterdam?

Whether/if-clauses:

(89) a. *Who were you wondering whether it was __ that that they were thinking of hiring?
b. *When did the doctor ask if it was __ that the patient last ate?

Factives:

(90) a. *Which vegetable did the nurse deny that it was __ that the patient last ate?
b. *Where did you regret it was __ that you found the victim?

Negative quantifiers/*only*-phrases:

(91) a. *What did no chart indicate it was __ that the patient last ate?
b. *How long did only Albert say it is __ that he's been in Amsterdam?

'Extraposition':

(92) a. *Which candidate was it a shame that it was __ that he voted for in the last election?
b. *How was it a shame that it was __ that she managed to fix that disk drive?

This non-asymmetry between the extraction of arguments and adjuncts cannot be accounted for by existing semantic accounts of weak islands (Szabolcsi and Zwarts

1993, Rullmann 1995), since in these cases, the domain of quantification (of the wh-extractee) remains the same: an unordered set of individuals (which naturally forms a Boolean algebra). This lends support to the syntactic approach to weak islands pursued in Rizzi 1990, 1994, and Manzini 1997.[3]

Significantly, the extraction of wh-pivots out of weak islands is much worse than extraction of small clause/functional projection subjects. These of course can be extracted as usual, as the control cases in (93) illustrate:

(93) a. {Who/Which candidate} do you regard __ as your strongest competitor?
b. {Who/Which official} did you call __ an idiot?
c. {When/What time of the day} do you consider __ the best time for fishing?

---

[3] Since this conclusion is an unwelcome one to me, and since the intuition that 'weak' (selective) islands are not a syntactic phenomenon is a strong one, I will sketch a possible way of reconciling the data in this section with a non-syntactic approach here, though space precludes a thorough implementation. The basic intuition is that what is going wrong in extraction from negative clefts and the like is pragmatic: there are too many possible correct answers to such questions, and hence no useful purpose could be served by asking one. This is essentially Kuno and Takami 1997's 'Ban on questions that solicit uninformative answers', which is just a statement of this fact. (Note that the data in this section fall under the more specific constraint they propose as well: the 'Ban on extraction of the focus of negation'). Kuno and Takami's exposition is extremely informal; here, I provide a more clear formal example to flesh out the intuition.

Since cleft questions are just identificational questions with existential and uniqueness presuppositions, let us begin by examining a simple case. Consider the identificational question in (ia), and its representation in a Karttunen semantics in (ib), assuming a Russellian ι-operator for the definite (for simplicity, I represent the presupposition 'ι**president**(y)' as simply conjoined with the question [i.e., globally accomodated], glossing over the difficult question of how to incorporate presuppositions into such representations).

(i) a. Who is the president of the United States?
b. ι**president**(y) $\wedge$ λp[$\exists$x**person**(x) $\wedge$ $^\vee$p $\wedge$ p = $^\wedge$[x = y]]

Now consider the negation of (ia), which is distinctly odd:

(ii) a. #Who isn't the president of the United States?
b. ι**president**(y) $\wedge$ λp[$\exists$x**person**(x) $\wedge$ $^\vee$p $\wedge$ p = $^\wedge$[$\neg$(x = y)]]

The reason this seems odd is that any person who is not the president provides a suitable true answer, and, as Kuno and Takami discuss, it is extremely difficult to imagine situations where such an answer would serve a conversational purpose. Viewed from the perspective of a Groenendijk and Stokhof semantics of questions, for example, the answer would have to be the exhaustive list (or characterization) of everyone who is not the president, which under reasonable assumptions will either be an unspeakably long list or a tautological response like "Everyone who's not the president is not the president".

Exactly the same considerations apply to wh-pivot questions. Consider for example (iii) and its negative counterpart (iv).

(iii) a. Which book was it that Abby read?
b. ιy[**book**(y) $\wedge$ **read**(**a**,y)] $\wedge$ λp[$\exists$x**book**(x) $\wedge$ $^\vee$p $\wedge$ p = $^\wedge$[x = y]]
(iv) a. #Which book wasn't it that Abby read?
b. ιy[**book**(y) $\wedge$ **read**(**a**,y)] $\wedge$ λp[$\exists$x**book**(x) $\wedge$ $^\vee$p $\wedge$ p = $^\wedge$[$\neg$(x = y)]]

Again, crucially, the formula in (ivb) is satisfied by any book which is not the unique one that Abby read. In essence, then, this approach places the burden of accounting for the ill-formedness of negative cleft questions on the pragmatics, and not on the semantics: the question denotations themselves are well-formed, but the question asked is practically useless.

If the approach sketched here can be successfully extended to other weak islands, the data in section 5.3.1 do not necessarily support an adjunction structure for the pivot.

But the usual argument/adjunct asymmetry is clearly detectable when these small clause subjects are extracted from under weak islands, as the following examples using *regard* [$_{SC}$ __ *as ...]* and *call* [$_{SC}$ __ *an idiot]* show. (94) illustrates the effect for negation, (95) for *whether/if*-clauses, (96) for factives, and (97) for a negative (here, downward monotonic) subject.

(94) a. {Who/Which candidate} don't you regard __ as your strongest competitor?
b. {Who/Which official} didn't you call __ an idiot?
c. ??{When/What time of the day} don't you consider __ the best time for fishing?

(95) a. {Who/Which candidate} were you wondering whether he regards __ as his strongest competitor?
b. {Who/Which official} were you wondering whether he called __ an idiot?
c. ??{When/What time of the day} did you ask if the baitman considers __ the best time for fishing?

(96) a. {Who/Which candidiate} did they deny that they regarded __ as the strongest competitor?
b. {Who/Which official} do you regret calling __ an idiot?
c. ??{Where/Under which mattress} did Mark regret that he had considered __ the best place to hide his money?

(97) a. {Who/Which candidate} does no-one regard __ as the strongest competitor?
b. {Who/Which official} would no-one call __ an idiot?
c. ??{When/What time of the day} did no-one consider __ the best time for fishing?

Again, if sensitivity to weak islands is indeed a structural, syntactic property, then the fact that extraction of the pivot of a cleft is uniformly sensitive to them while extraction of typical small clause subjects (in the specifier of the functional projection) makes a successful assimilation of the former to the structure of the latter appear unlikely. If, on the other hand, adjuncts are sensitive to weak islands by virtue of their structural properties (e.g., adjunct status), we have direct support for the structure proposed in (66a).

5.3.2 Extraction of a subconstituent of the pivot

A further piece of evidence in favor of an adjoined position of the pivot comes from the behavior of proper subconstituents of the pivot under extraction. Extraction of these has the same status as extraction from an adjunct, as (98) and (99) show.

(98) a. ??What was it [a picture of __] that they used for their logo?
b. ?Which mountain was it [a picture of__] that they used for their logo?
c. ??Who was it [a picture of __] that they were thinking of hanging above their bed?
d. ??Which candidate was it [a picture of__] that the student newspaper wanted?

(99) a. ??What was it [arguments about __] that led to their divorce?
b. ??Which theory is it [arguments for __] that you find so unconvincing?
c. ??Which principle is it [appeals to __] that make Jorge angry?

Though constraints on placing the appropriate kind of DP (i.e., indefinite singulars and bare plurals, since these are the easiest DPs to extract from) in the pivot position may be thought to be able to account for some of the deviance found in (98)

and (99) (though I do not find such indefinites in pivot position at all unacceptable), the following data from Hiberno-English show that any such approach is on the wrong track (thanks to Jim McCloskey for these data). In Hiberno-English, in contrast to standard American and British varieties, APs and VPs can appear in the pivot position, as in (100).

(100) a. It's fond of you (that) he is.
b. It was frying bacon (that) I was.

Crucially, extraction from these pivots is also on a par with extraction from adjuncts, as seen in (101).

(101) a. ??Which of them is it [fond of __] that he is?
b. ??What was it [frying __] that he was?

Again, the extraction of subparts of pivots constrasts with extraction of subparts of typical small clause subjects, which is quite acceptable, as illustrated in (102). This asymmetry is another point in favor of the adjunction analysis over the functional projection analysis.

(102) a. Which bill do you regard [supporters of __] as idiots?
b. Which bill did the president call [supporters of __] 'misguided at best'?
c. Which bill did you see [supporters of __] chanting slogans?

It has been proposed (Tancredi 1990, Kuno and Takami 1997) that one cannot extract (certain kinds of) focussed XPs. While the very fact that extraction of wh-pivots is possible at all is problematic for such a view, one might suppose that a modification of this principle could be held accountable for the deviance seen with extraction of subparts of the pivot, assuming the pivot is indeed a 'focus position'. In other words, one might postulate that extraction from an XP that contains a focus is illicit; this would account for the data discussed in this section. But we can see immediately that such an approach is simply wrong: as in the data in (103) show, there is nothing wrong with extracting subparts of the DPs which contain a focus (here 'narrow' or 'contrastive' focus). (103e) demonstrates that even parasitic gaps can be licensed in such environments.

(103) a. What did you only hear [RUmors about __]?
b. Which bill did they only file [a PROtest against __], not an injunction?
c. Who do you only know [FRIENDS of __]?
d. Which newspaper does Bill only talk to [rePORTers from __]?
e. What theory do only [supPORTers of __] ever discuss __?

We have seen in these two subsections that data from extraction of the pivot and subparts of the pivot lend support to the simple phrase stucture proposed in (66a) above. We have noted a number of asymmetries between these extractions and extractions from prototypical small clause functional projection subjects which are puzzling under the phrase structure for clefts in (66b) often supposed in the literature.

5.4 Exhausitivity of the pivot and *only*

I conclude with some brief remarks on the semantic interpretation of the pivot position in the cleft and the import of this for the semantics of *only*. A pivot is interpreted exhaustively in the standard cases, as Kiss 1996 shows, and I will not repeat her evidence here (see also footnote 2). What is interesting about this semantic fact is the light it sheds on the interpretation of *only*, which has often been thought to

encode only exhaustivity as well. From this perspective, it is somewhat surprising that *only* can modify a pivot:

(104) a. It's (only) Newton who invented calculus.
b. It was (only) Susan who the captain picked.
c. It's (only) Frank that solved problem 3.
d. It was (only) Ben that climbed Mt. Everest.
e. It's (only) Susan who drives a Fiat.

The versions with *only* do not seem merely redundant—instead, *only* seems to indicate scalarity here (cf. *Ben arrived only yesterday*). In other words, the fact that *only* can occur in the pivot supports the conclusions of Kiss 1996, Schwarzschild 1996, and Tomioka 1997 that *only* isn't (just) exhaustive.

This conclusion is further supported by the data in (105). If uniqueness is imposed by the presupposition, a cleft is fine, but *only*-modification is impossible (see Szabolcsi and Zwarts 1993 for some discussion of such predicates, though they do not discuss *only* modification).

(105) a. It's (*only) Newton who first invented calculus.
b. It was (*only) Susan who the captain picked last.
c. It was (*only) FDR who was president when the war broke out.
d. It's (*only) the sun that's the center of the solar system.
e. It's (*only) The Pickwick Papers that was Dickens' first book.
f. Of the triplets, it was (*only) Paul that was born first.

Similarly, with comparative superlatives (Szabolcsi 1986, Farkas and Kiss 1995), only the absolute reading survives with *only*, while both readings survive under clefting.

(106) a. It's (only) Frank that solved the hardest problem.
b. It was (only) Ben that climbed the highest mountain.
c. It's (only) Susan who drives the fastest car.

Thus it is reasonable to conclude that while the pivot of a cleft enforces true exhaustivity, *only* does not.

6 Conclusions

This paper has ranged over a number of disparate, but connected topics. Proceeding from the most recent discussion, it was argued on the basis of a number of phenomena that the pivot+CP of the cleft forms a constituent, that this constituent is the complement to *be*, and that it acts like a CP with respect to the expletive subject *it* and agreement. Both proposals considered in section 5 can plausibly account for these properties, though we saw some reasons to prefer an adjunction structure over the standard functional projection analysis.

Preceding that discussion, the similarities and differences between sluicing and wh-pivots in clefts in English were investigated, with the conclusion that sluicing *sensu stricto*, as it occurs in English, cannot be reduced to a cleft-like underlying derivation.

The Japanese 'sluicing' data examined, on the other hand, lent themselves much more readily to an analysis which took these structures to instantiate elliptical clefts and not sluicing of the English variety.

Finally, then, we can give an answer to the question that opened the paper: a sluice is not a sluice when it's a pseudosluice.

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THE CORE SEMANTICS OF THE PRESENT PERFECT*

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1. Perfectly compositional?

1.1. The problem

The present perfect in German is one of three perfect constructions in this language, which are illustrated in (1-1). In each of these constructions, the verb appears in the past particial form and is combined with an auxiliary - in this case, *haben* ('have'); other verbs form their perfect constructions with the auxiliary *sein* ('be'). The auxiliary can then be combined with a tense - i.e. the present tense as in (1-1a), the past tense as in (b), or the future tense as in (c).

(1-1) a. PRESENT PERFECT: Hans *hat* seine Freundin *angelogen.*
Hans has his girlfriend lied-to
b. PAST PERFECT: Hans *hatte* seine Freundin *angelogen.*
Hans had his girlfriend lied-to
c. FUTURE PERFECT: Sie *wird* ihn bald *verlassen haben.*
She become him soon left have

The ultimate goal of this paper is to start explaining the semantics of these three perfect constructions. As will shortly become clear, however, the present perfect is the most intricate of the perfect constructions; hence, I will focus on the present perfect. The idea behind this strategy is that if the semantics of the present perfect has been figured out, the semantics of the past perfect and of the future perfect should fall out automatically as a by-product of the semantics of the present perfect combined with an account of the past tense and the future tense.

This paper approaches the German present perfect by asking whether the present perfect can be given a compositional analysis, and if so, how. In principle, the task seems clear. The construction consists of the morphosyntactic items listed in (1-2),

(1-2) verb + past participle morph. + $\begin{bmatrix}\text{auxiliary } \textit{haben} \\ \text{auxiliary } \textit{sein}\end{bmatrix}$ + present tense

and thus, it seems obvious what we have to do - namely, to see what the semantic contribution of each item is and then glue everything together. Viewed from a different angle, the task may also be described as follows: we have to see what

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semantic components we have to attribute to the present perfect construction in order to describe its semantics adequately; the next step would be to investigate how the semantic components are distributed on the morphosyntactic material shown in (1-2).

Yet there is a strong disagreement in the literature on whether the present perfect can be given a compositional analysis. While most traditional grammarians and historical linguists as well as many modern theoretical linguists (e.g. Wunderlich (1970), Comrie (1985), Nerbonne (1985), Bierwisch (1996)) believe that the present perfect cannot be analyzed compositionally, many other linguists pursue compositional accounts. These latter accounts start out with the assumption that the construction corresponds to the combination of three components semantically - the verb, a component that expresses anteriority, and the present tense. Such accounts were proposed, for instance, by Bäuerle (1979)[1], Janssen (1988), Fabricius-Hansen (1986, 1994), Ballweg (1989), Ehrich/Vater (1989), Ehrich (1992), Zeller (1994), and Grewendorf (1995). Even the compositional proposals differ, however, both with regard to the question of how the components are combined and of what the semantic contribution of each component is. Ballweg (1989), for instance, suggests an analysis like (1-3a), where the combination of the participle morpheme and the auxiliary expresses the anteriority, called "perfect". Contrasting with this, Grewendorf (1995) proposes an analysis like (1-3b). According to him, the auxiliary and the present tense are a unit semantically, the auxiliary is virtually semantically empty, and the past participle morpheme expresses completedness of the situation denoted by the verb.

(1-3) a. $V + [_{perfect}\ PART + AUX] + PRES$
b. $V + PART_{compl} + [AUX_{\emptyset} + PRES]$

Note that what Ballweg's and Grewendorf 's accounts have in common is that they do not assign crucial content to the auxiliary as such. One of the reasons for this is that in general, combinations of auxiliaries and participles or infinitives are highly idiosyncratic semantically. This is sketched in the table in (1-4).

(1-4)

auxiliary	verb form	resulting meaning
haben ('have')	infinitive (+ *zu*)	modal, necessity
	past participle	perfect
sein ('be')	infinitive (+ *zu*)	modal, necessity/possibility
	past participle	depending on the verb: (a) stative passive, or (b) perfect
werden ('become')	infinitive	(a) future (b) modal, supposition of the speaker
	past participle	eventive passive

Thus, it seems difficult - if not impossible - to assign uniform denotations to the auxiliaries as such. Facing this situation, taking auxiliaries as semantically vacuous items does not seem to be the worst strategy. But not only the analysis of the auxiliaries contained in present perfect constructions is problematic; the semantic

[1] To be precise, Bäuerle (1979) assumes this for one reading of the present perfect; he assumes that the present perfect is ambiguous. For more on ambiguity accounts of the present perfect, see below.

analysis of the simple present tense and the semantic analysis of the past participle morpheme turn out to be difficult as well because there do not seem to be well-established analyses available for either of these components.

Thus far we have looked at the morphosyntactic components that the present perfect construction comprises. Let us now take a brief look at the main semantic characteristics of the construction and consider the question of what semantic components we might need in order to describe its semantics.

1.2. Some characteristics of the present perfect

It is well-known that the present perfect can express some kind of anteriority that is similar to the anteriority expressed by the simple past tense. Thus, the sentences in (1-5) seem to have exactly the same meaning.[2]

(1-5) a. PRESENT PERFECT: Hans *hat* gestern einen Brief *geschrieben.*
Hans has yesterday a letter written
b. PAST TENSE: Hans *schrieb* gestern einen Brief.
Hans wrote yesterday a letter

However, it is also well-known that the present perfect and the past tense cannot always be substituted by each other without a loss of acceptability or a change of meaning. Thus, the examples in (1-6) illustrate that the acceptability of the present perfect or the past tense can vary in some constructions for some reason or other. The particular examples in (1-6) suggest that one trigger of effects like this might be restrictions on the use of the past tense in embedded clauses.

(1-6) a. Daß ich Gereon *gesagt habe*, ich würde gehen, war falsch.
that I Gereon told have I would leave was wrong
b. ?? Daß ich Gereon *sagte*, ich würde gehen, war falsch.
that I Gereon told I would leave was wrong

(1-7) and (1-8) illustrate another difference between the present perfect and the past tense. It seems that the past tense can only be combined with past time adverbials (1-7), while the present perfect can be combined with past time as well as present time or future time adverbials (1-8).

(1-7) a. PAST ADVERBIAL: Hans schrieb *gestern* den Brief .
Hans wrote yesterday the letter
b. PRESENT ADVERBIAL: *Hans schrieb *jetzt* den Brief.
Hans wrote now the letter
c. FUTURE ADVERBIAL: *Hans schrieb *morgen* den Brief.
Hans wrote tomorrow the letter

(1-8) a. PAST ADVERBIAL: Hans hat *gestern* den Brief geschrieben.
Hans has yesterday the letter written
b. PRESENT ADVERBIAL: Hans hat *jetzt* den Brief geschrieben.
Hans has now the letter written
c. FUTURE ADVERBIAL: Hans hat *morgen* den Brief geschrieben.
Hans has tomorrow the letter written

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2 Note that in the glosses, I translate German occurrences of the present perfect with the English present perfect, regardless of whether the result is acceptable.

It is important to note that these examples indicate that positional temporal adverbials in present perfect constructions - and in fact in all perfect constructions - differ from adverbials in simple tense clauses insofar as in principle, they can specify two different kinds of time that are important for the interpretation of perfect constructions. One option is that they specify the event time or SITUATION TIME (TS) of the verb. The other option is that they specify the time from which the situation time of the verb is calculated; roughly speaking, this is the time that is associated with the auxiliary and that can be located after the situation time of the verb. Using Reichenbach's (1947) term, let us call the latter time the REFERENCE TIME (R). For presentational reasons, this is illustrated with English past perfect clauses and their preferred readings in (1-9).

(1-9) a. TS-SPECIFICATION: He had left *at 10.* = The leaving took place at 10.
b. R-SPECIFICATION: *At ten*, he had left. = He was gone at ten.

Preferences for one reading or the other can be triggered by several factors. In English, the initial position of the adverbial or its position right after the subject support R-specification (1-10). The corresponding versions of German sentences do not trigger any of the readings particularly, cf. (1-11a, b). But TS-specification is strongly supported when the adverbial is topicalized together with the (rest of the) VP (1-11c). Moreover, stress on the auxiliary supports R-specification (1-12b), while stress on the past participle supports TS-specification (1-12a).

(1-10) a. TS-SPECIFICATION: He had left *at ten.*
b. R-SPECIFICATION: *At ten*, he had left.

(1-11) a. TS- or R-SPECIFICATION: Er war *um zehn* weggegangen.
he was/had at ten left
b. TS- or R-SPECIFICATION: *Um zehn* war er weggegangen.
at ten was/had he left
c. TS-SPECIFICATION: [*Um zehn* weggegangen] war er.
[at ten left] was/had he

(1-12) a. TS-SPECIFICATION: weil er um 10 WEGgegangen war
since he at 10 LEFT was/had
b. R-SPECIFICATION: weil er um 10 weggegangen WAR
since he at 10 left WAS/HAD

The following examples illustrate another property of the present perfect which is actually crucially related to the ways in which adverbials can relate to perfect constructions. (1-13a), a case of R-specification, is compatible with the fact that Hitler's attack took place before September 2, 1939 - namely, on September 1, 1939. But (1-13b) is hopelessly false; the past tense in this sentence wrongly requires the attack to have taken place on September 2 in order to make the sentence true because it can only be combined with a TS-specifying temporal adverbial.

(1-13) a. Am 2.9.1939 hat Hitler Polen überfallen.[3]
on 2.9.1939 has Hitler Poland attacked
b. Am 2.9.1939 überfiel Hitler Polen.
on 2.9.1939 attacked Hitler Poland

[3] Examples from Thieroff (1992).

Similarly, the sentences in (1-14), where the present perfect and the past tense are each combined with the adverbial *schon* ('already') express different meanings.

(1-14) a. Er hat schon gegessen. = He finished his meal.[4]
he has already eaten
b. ≠ Er aß schon. = He already started eating.
he ate already

While the present perfect version in (1-14a) suggests that his meal is finished, the past tense version in (1-14b) only suggests that he has already started eating.

Since examples like (1-13a) and (1-14a), but not (1-13b) and (1-14b), seem to refer to completed attack-situations and completed eating-situations, respectively, they may suggest that the kind of anteriority expressed by the present perfect differs from the one expressed by the past tense. Thus, Grewendorf (1995), Ballweg (1989), Ehrich and Vater (1989) attribute some kind of completedness of the situation denoted by the verb to the perfect construction. Comrie (1976), Fabricius-Hansen (1994), and Zeller (1994), however, suggest that the present perfect in German expresses the same kind of anteriority as the past tense. At a closer look it seems clear that completedness of the situation cannot be required of present perfect constructions in general; that the present perfect expresses something like anteriority does not mean that the whole situation must be anterior. The examples in (1-15) illustrate that it is enough if there is an interval before the time of utterance where the sentence can be asserted to be true. In this respect, the present perfect is similar to a past tense. For example, with respect to (a), we do not want to say that Martin's having a headache is over at the time of utterance. With (b), we do not want to claim that Ralf's knowing a lot about aspect is over. And similarly, (c) does not necessarily imply that the tiger has woken up.

(1-15) a. (Ralf hat heute morgen Martin getroffen.) Martin hat Kopfweh gehabt.
(Ralf has today morning Martin met) Martin has headache had
b. (Gestern habe ich mit Ralf gesprochen.) Ralf hat viel über Aspekt gewußt.
(Yesterday have I with Ralf talked) Ralf has much about aspect known
c. Der Tiger hat geschlafen.
the tiger has slept

But what about the occurrences of present perfect constructions that can hardly be understood without assuming that the situation denoted by the verb is completed - i.e. sentences like (1-13a) and (1-14a)? - Of course, we are still left with the possibility that the present perfect is ambiguous between an "aspectual reading" where it implies completedness and a "tense reading" where it does not. In fact, several ambiguity accounts of the present perfect have been proposed. Thus, Wunderlich (1970), Bäuerle (1979), and Klein (1997) analyze the German present perfect as ambiguous between an aspectual completedness reading and a past tense reading. There will be much more to be said about this possibility later.

Having become acquainted with some important properties of the present perfect, we are now ready to approach the intricate behavior of the present perfect in more detail, to start explaining it, and to ask to what extent its behavior is due to semantic, syntactic, or pragmatic factors. Before finishing this introductory section however, let me briefly introduce a general framework of temporal semantics that will be helpful for describing the behavior of the construction. Because I want to avoid

[4] Examples from Wolfgang Klein (pc).

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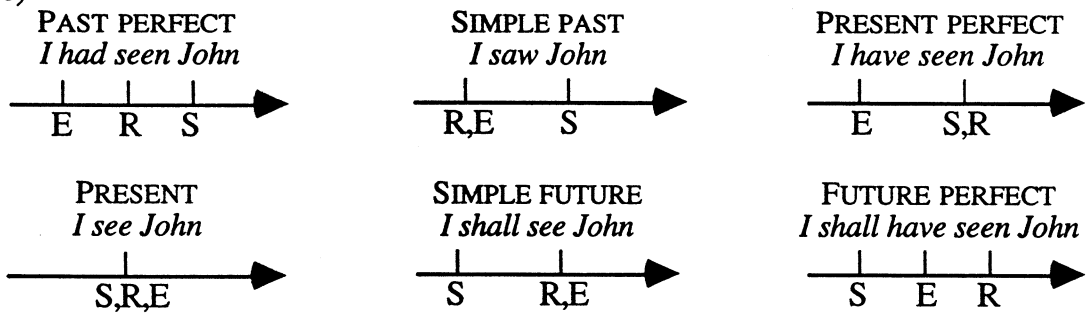
[4] Examples from Wolfgang Klein (pc).

theoretical preconceptions, I have chosen a version of Reichenbach's (1947) account of tense and Klein's (1992, 1994) theory of tense and aspect, which are not committed to very specific formal and theoretical implementations. Let me start by sketching some basic assumptions of these approaches.

1.3. Tense and aspect

Reichenbach (1947) describes tenses as relations holding between three points of time - the time of utterance or speech time, the time of the situation or event time of the verb, and the reference time. The TIME OF UTTERANCE or SPEECH TIME (TU or S) of a clause is the time at which it is uttered. Its TIME OF THE SITUATION or EVENT TIME (TS or E) is the time at which the event or situation described in the clause takes place.[5] While the notions of speech time and event time are intuitively clear, the notion of REFERENCE TIME (R) is more abstract. It may be characterized as the temporal point of view on the event. On the basis of S, E, and R, Reichenbach defines the set of all possible times. The main idea of this approach is that S, E, and R can stand in all logically possible temporal order relations to each other, i.e. each pair of them can precede or follow each other, or coincide. The diagrams in (1-16) illustrate this for the simple and complex perfect tense constructions in English, where temporal coincidence is indicated by a comma.[6]

(1-16)



Reichenbach's three point system has been criticized, exploited or improved in various versions by many linguists (e.g. Bäuerle (1977, 1979), Declerck (1991), Ehrich (1992), Fabricius-Hansen (1986), Hornstein (1990), Janssen (1988), Kratzer (1978), Nerbonne (1985), Vater (1983)).

It is important to note that in its original version, Reichenbach's account captures any particular tense construction as a combination of the ordering relations between all three points S, E, and R, regardless of whether the tense construction is simple or morphosyntactically complex. Especially the simple tenses however strongly suggest that the relation between S and E constitutes the core meaning of tenses. I.e. the present tense locates E at S, the past tense before S, and the future

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[5] The reason why I am introducing two terms and their abbreviations for each parameter is the following: when explaining Reichenbach's original ideas, it seems only appropriate to use the terms he introduced in his work. Nevertheless, Reichenbach's term "event time" seems a bit problematic, because "event" is a term that is still under discussion and used differently in the literature. For example, according to many terminologies, it is only applicable to achievements and accomplishments. Thus the term "situation" seems much less problematic and more general and hence, I will later switch to the term "time of the situation" rather than "event time". Since the abbreviation S or TS for "time of the situation" could then easily be confused with the abbreviation S for "speech time", I will also switch to the term "time of utterance".

[6] Cf. Binnick (1991:111ff).

tense after S. Intuitively, this seems plausible; thus, at first glance, one might think that the function of tense is to locate the event time E of the main predicate of an uttered clause relative to its speech time. For instance, the sentences in (1-17) seem to express that Stefan's calling me, Claudia's getting an appointment, and Uta's winning the marathon are located before the time at which these sentences are uttered.

(1-17) a. Stefan rief mich an.
Stefan called me at
b. Claudia bekam einen Termin.
Claudia got an appointment
c. Uta gewann den Marathon.
Uta won the marathon

However, other sentences clearly show that this cannot be quite right. Thus, the marked expressions in the examples in (1-18) are certainly not meant to say that Barschel's being dead, Gunnar's not being a child anymore, and the being dry of the flowers are located in the past but not in the present.

(1-18) a. Sie fanden Barschel in der Badewanne. *Er war tot.*
they found Barschel in the bathtub. he was dead
b. Letztes Jahr traf ich Gunnar wieder. *Er war kein Kind mehr.*
last year met I Gunnar again. he was no child anymore
c. Ich warf die Blumen raus, weil *sie trocken waren.*
I threw the flowers out because they dry were

Rather, the clauses are used to assert something about what was the case at a certain time in the past - the time when Barschel was found in the bathtub, the time when I met Gunnar again, and the time when I threw out the flowers, respectively. For instance, in (1-18a), the speaker asserts about the time when Barschel was found in the bathtub that Barschel was dead at that time. The time about which the assertions are made in each of the cases above is the reference time R. Exploiting a traditional term from information-structural theories, one may also say that the reference time R functions as a TOPIC in the examples above.

On the basis of observations like this, Klein (1992, 1994) proposes that TENSE locates the time about which an utterance asserts something - the TOPIC TIME (TT) - with respect to the speech time or TIME OF UTTERANCE (TU). Specifically, in accordance with standard assumptions, the past tense locates the topic time before the time of utterance, the present tense around the time of utterance or, perhaps, in other languages like German, not before the time of utterance, and the future tense at a time after the time of utterance.[7] Note that the notion of topic time in terms of assertion is based on a subjective, speaker-oriented view: the topic time of an utterance is the time the speaker has in mind as the time about which she wants to say what is, was, or will be, the case then.

The diagram below illustrates the effect of the past tense in the second sentence of (1-18a). While the first sentence suggests the time when Barschel was found in the bathtub as the topic time of the second sentence, the past tense in the second sentence tells us that this topic time is located before the time of utterance and asserts about this time that Barschel is dead.

[7] Let us assume that this holds at least for the canonical usage of the tenses. Later, we will have to say more about noncanonical usages and, perhaps, have to revise the view sketched here.

(1-19) Sie fanden Barschel in der Badewanne. *Er war tot.*
they found Barschel in the bathtub. he was dead

.....[___].....TU.....

TU time of utterance
[_] topic time: the time when they found Barschel in the bathtub

Given this approach, why does tense seem somehow to locate the situation expressed by the main predicate with respect to the time of utterance? Here, the interaction of tense and aspect comes into play: ASPECT locates the SITUATION TIME (TS) of the main predicate with respect to the TOPIC TIME (TT). For reasons that need not concern us right now, let us assume that the aspect in our example locates the situation time of the being dead around the topic time. Hence, since it is a common assumption that the being dead of a person is a never ending state, we arrive at the picture in (1-20).

(1-20) Sie fanden Barschel in der Badewanne. *Er war tot.*
they found Barschel in the bathtub. he was dead

.....{—[—]----------TU----------(})

TU time of utterance
[_] topic time: the time when they found Barschel in the bathtub
— situation described: his being dead
{–} situation time of his being dead ("(})" indicates that the right edge of the situation time is not 'real' because the state of a person's being dead does not end.)

Note that in this approach, every main predicate of a clause is subject to aspect. If it were not, then its situation time would not be located in time at all.

Of course, there are several other possibilities of how the topic time and the situation time may relate to each other. Morphosyntactically realized aspect can serve to distinguish these options; by choosing a particular aspect, one can express, for instance, that the situation time is located before the topic time or after the topic time. As an illustration, I add a survey of aspects and their realization in English, where TS- is the time before the situation time and TS+ is the time after the situation time.

(1-21)

aspect	**characterization TT/TS**	**realization in English**
IMPERFECTIVE	TS properly includes TT .....{--[---]--}.....	*ing*-form
PERFECTIVE	A. TT properly includes TT .....[..{---}..]..... B. TT intersects with TS,TS+ .....{--[---}..]..... C. TT intersects with TS,TS- .....[..{---]--}.....	simple form
PERFECT	TS+ properly includes TT .....{----}.[...].....	perfect
PROSPECTIVE	TS- properly includes TT .....[...].{----}.....	*is going to*

Interestingly, according to criteria of morphological markedness, the perfective aspect is the default aspect.

It is important to keep the correspondences between Klein's terminology and Reichenbach's terminology in mind. Klein's topic time largely corresponds to Reichenbach's reference time in being a time relative to which the situation time of the verb is located. And the function of Klein's aspect corresponds to the relation between the reference time and the situation time in Reichenbach's terms.

In the remainder of this paper, I discuss first the semantics of the components of the present perfect construction first separately and then how they may be combined. The idea behind this approach is to exploit for every component of the present perfect construction an analysis that is maximally uniform across different types of constructions in which the respective component can occur. For example, one would like to exploit an analysis of the present tense in present perfect constructions that is compatible with the semantics of the present tense in other environments. The same applies to the other components of the construction, of course, i.e. the verb, the past participle morphology, and the auxiliary. I will propose that semantically, the present perfect is composed as sketched in (1-22), as a whole denoting a poststate of a truth-interval of the VP at a time that is compatible with the topic time requirements of the tense of the clause.

(1-22) [[VP [PARTICIPLE MORPH. + AUX.]] PRES]

2. The morphosyntactic source of the anteriority component

We have seen above that the perfect is a relative temporal expression that expresses anteriority relative to a time depending on the tense of the clause and often relative to the time given by a positional temporal adverbial. Thus, it is clear that anteriority is a crucial semantic component of perfect constructions. But which of the morphosyntactic components is the source of this anteriority?

Opinions with regard to this point differ widely. Zeller (1994) and Grewendorf (1995) argue that the past participle morphology adds the anteriority, while Höhle (1992:116) and Bierwisch (1996) argue that the auxiliary must be the source of the anteriority. Kratzer (1994) adopts a third assumption, namely, that none of them is responsible for the anteriority; she assumes that a zero morpheme is responsible for anteriority effects (though only for adjectival past participles; her 1996 view seems to differ from this). Still another view in the literature is that the past participle and the auxiliary are a unit semantically and express anteriority only when taken together (e.g. Ballweg (1989), Ehrich (1992)).

Of these choices, the best guess seems to be that the past participle is the item that is responsible for the anteriority. This is strongly suggested by the behavior of past participles in environments other than perfect constructions (2-1) - i.e. in attributive constructions (2-2) or in stative passives (2-3).

(2-1) PERFECT CONSTRUCTIONS: sie gelaufen ist; sie ihn gesehen hat
she run is/has; she him seen has

(2-2) NP-INTERNAL MODIFIER: das rasierte Schaf; das verwirklichte Vorhaben;
the shaved sheep; the realized plan;
das gekochte Ei; das von Straßen zerrissene Dorf;
the boiled egg; the by roads destroyed village;
die von Bergen umgebene Stadt
the by mountains surrounded town

(2-3) STATIVE PASSIVE: sie beobachtet sind
they observed are

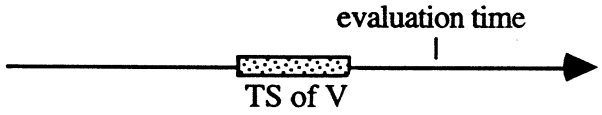
The shaving of the sheep, the realization of the plan, and the boiling of the egg in (2-2) must have taken place before the evaluation time[8] of the expressions. The cases of the destruction of the village by roads and of the surrounding of the town by mountains mentioned in (2-2) are a bit more complicated. For some reason that must have to do with the particular semantics of past participles depending on the type of verb it is formed of, here it is required that the destroying and the surrounding are still the case at the evaluation time.[9] However, also with these examples, at least an interval of destroying and surrounding must be located before the evaluation time. Ignoring the implausiblity of mountains that are moving around, if the destroying and surrounding starts only at the evaluation time, then this must be expressed as in (2-4).

(2-4) das von Straßen zerrissen werdende Dorf;
the by roads destroyed becoming village;
die von Bergen umgeben werdende Stadt
the by mountains surrounded becoming town

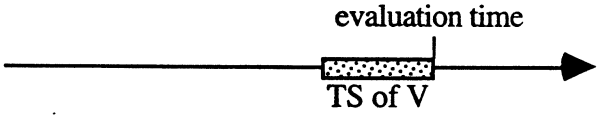
Finally, at least an interval of the observing in (2-3) must be located before the evaluation time of the clause.

Thus, in all the examples mentioned so far, the combination of verb plus past participle morphology can be truthfully uttered or be used as an appropriate description if and only if at least a time interval of V-ing took place before the time of utterance or before the evaluation time of the participle.[10] Hence, the evaluation time of a past participle and the situation time of the verb contained in the past participle can be temporally related to each other in various ways that are all compatible with this basic requirement. (2-5) illustrates the time relations that are possible in principle.

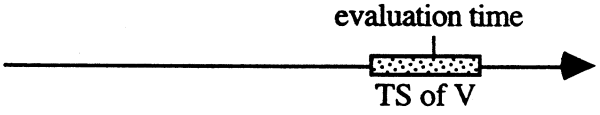
(2-5) a.



b.



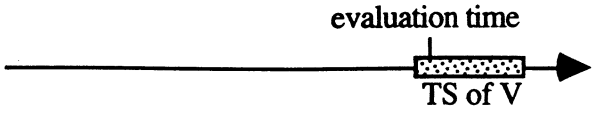
c.



8 The evaluation time of an expression is often, but not always, the same as its time of utterance. The notion of evaluation time may be relevant, for instance, for certain noun phrase interpretations which I called "temporally independent" in Musan (1995).

9 Dealing with the details of such restrictions is beyond the scope of this work. For relevant proposals, see, for instance, Rapp (1995), Klein (1997).

10 Viewed this way, the fact that remains unexplained is that with some verbs, the situation time of the verb has to include the evaluation time of the expression.

d. 

Thus, so far it seems that past participles express anteriority, regardless of their environment.

But what about eventive passive constructions as in (2-6)? In fact, passive constructions like (2-5) are the standard argument against the assumption that the past participle triggers the anteriority in perfect constructions: passives as in (2-6) contain past participles, too, but do not seem to express anteriority.

(2-6) EVENTIVE PASSIVE: sie gesehen werden
they seen become/are

However, it is theoretically possible to assign participles in passives an anteriority meaning, too. The resulting analysis is not too implausible. The idea is to exploit the ingressive meaning contained in the auxiliary *werden* in an appropriate way as sketched in (2-7) and below. Following Dowty (1979:141f) in his account of an operator 'BECOME', (2-7) may be taken to show the semantics of the verb *werden* ('become'), where *t* ranges over times and *P* ranges over predicates plus their other arguments.

(2-7) $[\![\text{werden}_v]\!]^c$ (P) (t) = 1 iff $\exists$t* containing the initial bound of t such that $[\![P]\!]^c$ (t*) = 0 and $\exists$t** containing the final bound of t such that $[\![P]\!]^c$ (t**) = 1.

However, this verb has to be distinguished from the homophonous auxiliary *werden*. For instance, note that the verb *werden* and the auxiliary *werden* exploit different past participle forms - namely *geworden* (for the verb) vs. *worden* (for the auxiliary). I take this as independent morphological evidence that, although they go back to the same origin ethymologically, the two words were subject to independent historical developments. This explains that they also differ semantically to some extent. For the auxiliary *werden*, one may suggest the following lexical entry, which is a reduced version of (2-7) insofar as the condition on the initial bound is eliminated.

(2-8) $[\![\text{werden}_{aux}]\!]^c$ (P)... (t) = 1 iff $\exists$t* containing the final bound of t such that $[\![P]\!]^c$ (t*) = 1.

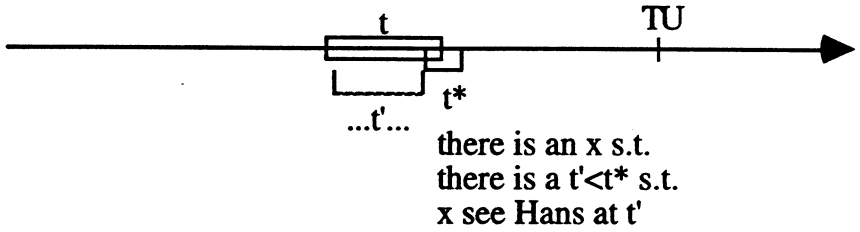
Moreover, let us assume the tentative minimal truth conditions in (2-9) for a VP including all arguments *x, y*... of the verb as well as a past participle morpheme. The truth conditions take into account that a past participle requires that there be a truth interval of the verb before the evaluation time.

(2-9) $[\![$ ge-V-t (x)... $]\!]^c$ (t) = 1 iff $\exists$t*< t such that $[\![$ V (x)... $]\!]^c$ (t*) = 1

The tentative semantics suggested so far still has to be improved somewhat. Note that according to Kratzer (1994), passives differ from actives in having an implicit external argument. It turns out that the implicit argument must be bound by a relatively far-outside existential quantifier which has wider scope than the auxiliary *werden*. Moreover, taking the role of topic times into account, we arrive at truth conditions as illustrated in (2-11) for the example *(weil) Hans gesehen wurde* ('(since) Hans seen was') when uttered about the topic time yesterday-at-12, as in (2-10).

(2-10) Gestern um 12 passierte es tatsächlich, daß *Hans gesehen wurde.*
yesterday at 12 happened it indeed that Hans seen was

(2-11) *Hans gesehen wurde*, uttered about the TT yesterday-at-12:
$[\![[_{TT}$ yesterday at 12] $\exists x$ (x Hans gesehen wurde)$]\!]^c (t_u) = 1$ iff
for t = yesterday at 12, where $t < t_u$,
$\exists x$, $\exists t^*$ containing the final bound of t such that $\exists t' < t^*$
such that $[\![$x see Hans$]\!]^c (t') = 1$.[11]



Thus, the semantics sketched above gives us adequate truth conditions for eventive passive clauses like *Hans gesehen wurde.* Given that *Hans gesehen wurde* is truthfully uttered about the topic time yesterday at 12, our semantics intuitively says that at the right edge of the time interval "yesterday at 12", i.e. t*, it is the case that *Hans gesehen* is true. Since the semantics of the past participle requires there to be a truth interval of the verb before the evaluation time (which is the right edge of the time interval "yesterday at 12", i.e. t*), this amounts to saying that it is the case that *x Hans sehen* is true before the right edge of the time interval "yesterday at 12". But since the assertion is made only about the topic time yesterday at 12, it is the case that *x Hans sehen* is true at a time before the right edge of the time interval "yesterday at 12", however at 12.

Interestingly, passives indeed seem to have developed from an interpretation very much like this. Specifically, eventive passives go back to ingressive constructions as illustrated in (2-12a). Later they developed to imperfective constructions as in (2-12b).

(2-12) Historical development of eventive passives (with *werden*)
a. ORIGINAL CONSTRUCTION: INGRESSIVE:
er wird ein (von x) Erschlagener
he becomes a (by x) slain (person)
b. LATER CONSTRUCTION: IMPERFECTIVE:
er wird (von x) erschlagen
he "becomes" (by x) slain = 'he is slain'

This does not mean that the anteriority of past participles in passives is still semantically real or active or plays a role intuitively, of course. Rather, passive constructions are highly grammaticalized. However, if these remarks are on the right track, then the intuitive non-anteriority of participles in this one construction is not a good argument against the anteriority of past participles in general. It is just a historical accident that eventive passives lost their anteriority component by

11 Interestingly, analogous conditions hold for the use of *werden* in future tense constructions: for *Maria wird Hans sehen*, we also do not want to claim that there is a change from a not-seeing to a seeing (of Hans by Maria) involved. However, the analogous application of TTs results in less desirable consequences with present perfect constructions like *Maria Hans gesehen hat* or future tense constructions like *Maria Hans sehen wird.*

grammaticalizing the combination of the past participle and the auxiliary *werden*. However, it remains plausible that in other environments, the past participle may have kept this anteriority component.

To summarize, the most plausible conclusion is that the past participle is the source of the anteriority component in present perfect constructions, not the auxiliary. However, this does not in principle preclude the possibility that the construction may be lexicalized or grammaticalized or historically reconstructed in one way or other. In the next section, we will address the question of whether and how precisely the anteriority related component of the present perfect construction is historically reconstructed.

3. Identifying the synchronic anteriority component: an optimality approach to semantic requirements and phonetic realization constraints on focus

As we will see in this section, effects of focus positioning on the present perfect construction provide crucial evidence about its semantic composition. The data to be discussed involve, among other things, verum (or: polarity) focus.[12] According to Höhle (1992), verum focus in German is often realized on the finite verb of a clause p and expresses something like "It is true that p" as opposed to the alternative "It is false that p", where p is typically known from the context. However, focus on a finite verb can also have other effects as illustrated in (3-1); here it can trigger either verum focus or anteriority focus, or content focus.

(3-1) Hans LAS das Buch
Hans READ the book
verum focus: "It is *true* that Hans read the book, not false."
anteriority focus: "Hans read the book in the *past*,..."[13]
content focus: "Hans *read* the book, ..."

When the verb and the finiteness are separated by an auxiliary that carries tense and agreement - e.g. in a present perfect construction - the occurrence of the three effects verum focus, anteriority focus, and content focus varies, depending, first, on whether the focus accent is realized on the verb or on the auxiliary, and second, on whether the verb is rich in content or poor in content. The examples in (3-2) involve the verb *lügen* - a verb that is rich in content. In (3-2a) the focus accent is on the auxiliary, and verum focus and anteriority focus interpretations are available, while content focus is unavailable. In (3-2b), the focus accent is on the verb, and the content focus interpretation is the only option that is available.[14]

(3-2) a. Hans HAT gelogen
Hans HAS lied
verum focus: "It is *true* that Hans lied,..."
anteriority focus: "Hans lied in the *past*,..."
*content focus

12 The sentences and anteriority judgements are taken from Höhle (1992:115); the characterization and interpretation of the data is mine.

13 Note that anteriority focus does not necessarily imply that the situation is over at TU.

14 Neither verum focus nor anteriority focus depend on the position of the verb.

b. Hans hat geLOgen
Hans has LIED
*verum focus
*anteriority focus
content focus: "Hans *lied*..."

What can we conclude from the data we have considered so far? - Taking into account the standard approach of alternative semantics to focus (cf. Rooth (1985)) and common assumptions on focus projection (cf. e.g. Schwarzschild (1997)), the examples suggest that in the present perfect constructions in (3-2) the verbal content component is encoded by the past participle verb. This is perfectly in accordance with our expectations. Moreover, the "verum component" and the anteriority component of the clause are encoded by the finite auxiliary. Note that the encoding of the anteriority component by the finite auxiliary is somewhat surprising, given that diachronically we identified the past participle morpheme as the source of the anteriority. Does this mean that the anteriority somehow switched from the past participle morpheme to the auxiliary at some point?

Looking at another set of data may help to draw the right conclusions in this respect. Interestingly, the generalizations arrived at in (3-2) turn out to fail in clauses where the verb is comparatively contentless. This is illustrated in (3-3). Here, focus on the auxiliary only allows for verum focus but not for anteriority focus (a, b). And focus on the past participle verb only allows for anteriority focus but not for verum focus or content focus (c, d).

(3-3) a. Er HAT Schnupfen gehabt
he HAS cold had
verum focus: "It is *true* that he had a cold,..."
*anteriority focus
*content focus

b. Er IST krank gewesen
he IS/HAS sick been
verum focus: "It is *true* that he was sick,..."
*anteriority focus
*content focus

c. Er hat Schnupfen geHABT
he has cold HAD
*verum focus
anteriority focus: "He had a cold in the *past*,..."
*content focus

d. Er ist krank geWEsen
he is/has sick BEEN
*verum focus
anteriority focus: "He was sick in the *past*,..."
*content focus

Given the standard assumptions on focus semantics and focus projection, this suggests that in the present perfect constructions in (3-3), the "verum component" is again encoded by the finite auxiliary. However, the anteriority component of the clause is not. Rather, it is encoded by the participle verb. Moreover, note that the verbal content component is not encoded by the past participle verb; since this verb is extremely poor in content in this type of example, this is not surprising.

To summarize, the crucial observation is that anteriority focus can be realized either on the auxiliary or on the participle, depending on whether the verb is rich in

content or poor in content. Shall we conclude from this that anteriority is encoded by the auxiliary when the verb is rich in content, but encoded by the participle verb when the verb is poor in content? - Of course, a nonuniform account like this would be highly undesirable. Rather, we would give the encoding of anteriority in different verb constructions a uniform explanation and explain the nonuniform behavior in (3-2) versus (3-3) by independent principles.

Fortunately, considering focus semantics and general conditions on phonetic focus realization, focus positioning, and focus projection already takes us a big step forward in finding an explanation for the intricate data above. In the following, I will briefly explain these principles. As we will see, it seems that they interact in a manner that can be best captured in an optimality theoretical aproach (cf. Prince and Smolensky (1993)). Exploiting their interaction will enable us to explain the patterns of anteriority focusing without reference to a nonuniform account of anteriority encoding and moreover, without reference to a diachronic switch of the anteriority component from the past participle morpheme to the auxiliary. Rather, we only need to assume that the perfect construction was grammaticalized and reconstructed in such a way that the morphosyntactic units past participle morpheme and auxiliary stem came to form a complex encoding anteriority synchronically.

Note, first, that focus is realized on a component that is supposed to carry a focus feature semantically.[15] However, for phonetic reasons, focus cannot be realized everywhere. Thus, focus needs the nucleus of a syllable - a vowel, it seems - in order to be realized. But not every type of vowel is an appropriate phonetic focus carrier; schwa syllables are known to be inappropriate focus carriers (with the exception of contrastive echo focus). Moreover, focus strongly prefers to match with word accent.[16]

Another restriction on focus realization is that focus clash is to be avoided. I.e., ambiguities of focus interpretation are to be avoided. Of course, the basic principle behind this is quite a general principle in natural language - namely, the pragmatic principle to avoid ambiguity whenever possible - and languages have developed strategies in order to reach this goal. Thus, scrambling in German can be used to disambiguate scope ambiguities of quantificational noun phrases among each other, or among adverbials and other scope inducing items. And intonation patterns can be used to disambiguate scope ambiguities, too.

When a certain choice of focusing cannot be realized on a particular syllable, the focus accent is shifted to an adjacent syllable.[17] Interestingly, this focus shift does not have to respect the hierarchy of semantic composition. Rather, it happens either in accordance with the morphosyntactic structure or in accordance with the phonological hierarchy: if possible, focus shift happens within the word boundaries surrounding its basic position. As we will see shortly, the question whether the morphosyntactic or the phonological hierarchy is responsible for the realization of focus shift need not concern us here; this is so because the cases relevant for the behavior of focus in present perfect constructions concern only shifting within the

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15 For a discussion of the semantics and pragmatics of the focus feature as well as of principles of focus projection, see, for instance, Schwarzschild (1997)).

16 The principle "Avoid focus carrying schwa syllables" seems to be independent of the principle "Match focus with word accent". For example, it is well-known that *es* ('it') in German (as well as *it* in English) can hardly be focused at all, even if it makes perfect sense semantically.

17 Alternatively, one may assume in accordance with Büring (1995) and Schwarzschild (1997) that focus is generally in a maximally specific or informative position. I.e. even if a focus accent realized in a higher position is compatible with the intended focus interpretation, the realization in a lower position will be prefered when it is more informative - i.e. compatible with fewer focus interpretations.

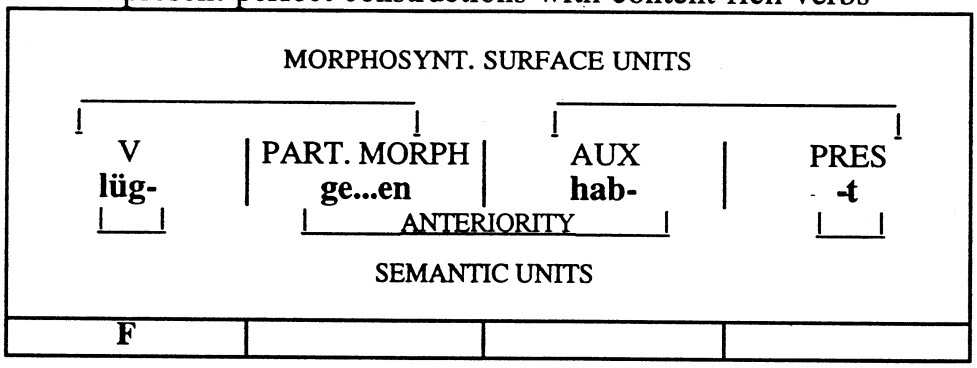
word. Thus, for the present purpose, it is irrelevant whether the word boundaries are relevant as morphosyntactic boundaries or whether they are relevant phonological boundaries - simply because in most cases, and in all cases that are relevant presently, they constitute the phonological constituent of phonological words.

Interestingly, from the restrictions on focus realization in combination with the necessity to express certain foci, it follows that in cases where several realizations of a certain focusing are logically possible and all these possible realizations are problematic, some criteria or other have to decide which of the logically possible focus realizations is the best and which the worst among the choices.

Let us now see how these principles apply to the case of present perfect constructions. Obviously, the focus effects we observed above suggest that there are at least three semantic components encoded in present perfect constructions - content, anteriority, and what I would like to call a "verum feature". The assumption of a verum feature doubtlessly deserves further consideration; but since the motivation of such a feature is not crucial for the purpose of this paper, I will stipulate the feature here without further discussion. In any case, the question we have to address next is where in the construction these semantic components are encoded. Content is encoded by the verb or VP, of course. The verum feature is most likely encoded by the finiteness morphemes of the clause - i.e. by the tense/agreement morphology. Moreover, we will see that the distribution of focus accents in present perfect constructions can be best explained, if we assume the following: the anteriority, stemming from the past participle morphology, has undergone a form of historic reconstruction and is encoded synchronically by the complex consisting of the past participle morpheme and the auxiliary.

Having established these preliminaries, let us consider first the case of present perfect constructions with verbs that are rich in content. I will go through the realization of content focus, verum focus, and anteriority focus each step by step.

(3-4) Content focus in present perfect constructions with content-rich verbs



(3-5) Verum focus in present perfect constructions with content-rich verbs

MORPHOSYNT. SURFACE UNITS			
V **lüg-**	PART. MORPH **ge...en**	AUX **hab-**	PRES **-t**
	ANTERIORITY		
SEMANTIC UNITS			
		F	*F because the affix cannot carry focus accent. Hence, shift within word. ←

(3-6) Anteriority focus in present perfect constructions with content-rich verbs[18]

MORPHOSYNT. SURFACE UNITS			
V **lüg-**	PART. MORPH **ge...en**	AUX **hab-**	PRES **-t**
	ANTERIORITY		
SEMANTIC UNITS			
*F because of clash with content focus.	OPTION I: *F because of 1. schwa nuclei, 2. no match with word accent. Hence, shift within word. ←		
		OPTION II: *F because of clash with verum focus. But (II) is better than the multiple violations of option I. Hence F.	

Thus, with the independently motivated principles of focus semantics and focus realization, we correctly predict the actual occurrence of focus effects in

[18] The basic idea of this is due to Veronika Ehrich (pc). She has pointed out to me that the past participle morpheme itself most likely is not an appropriate carrier of accents in general. In fact, focus positionings as in (A) are plainly unacceptable.

(A) a. *Hans hat GElogen/geloGEN.
b. *Er hat Schnupfen GEhabt.
c. *Er ist krank GEwesen/geweSEN.

present perfect constructions with content-rich verbs. But how about constructions with content-poor verbs?

In functional verb constructions like *einen Schnupfen haben* ('have a cold'), the noun phrase and the verb are supposedly a relatively strong semantic unit in which the verb does not express much crucial content at all. Hence, focus on the verb is not a good candidate for expressing content focus. However, the noun phrase is, and consequently, focus on the noun phrase can express content focus very well as indicated in (3-7).

(3-7) Content focus in present perfect constructions with content-poor verbs

MORPHOSYNT. SURFACE UNITS				
NP	V	PART. M.	AUX	PRES
Schnupfen	**hab-**	**ge...t**	**hab-**	**-t**
[FUNCTIONAL V CONSTR.]		[ANTERIORITY]		
SEMANTIC UNITS				
	OPTION I: ***F** because V is poor in content.			
OPTION II: **F**				

(3-8) Verum focus in present perfect constructions with content-poor verbs

MORPHOSYNT. SURFACE UNITS				
NP	V	PART. M.	AUX	PRES
Schnupfen	**hab-**	**ge...t**	**hab-**	**-t**
[FUNCTIONAL V CONSTR.]		[ANTERIORITY]		
SEMANTIC UNITS				
				***F** because the affix cannot carry focus accent. Hence, shift within word. ◄
			F	

(3-9) Anteriority focus in present perfect constructions with content-poor verbs

MORPHOSYNT. SURFACE UNITS				
NP	V	PART. M.	AUX	PRES
Schnupfen	**hab-**	**ge...t**	**hab-**	**-t**
FUNCTIONAL V CONSTR.		ANTERIORITY		
SEMANTIC UNITS				
	F (No clash with content focus!)	OPTION I: *F because of 1. schwa, 2. no match with word accent. Hence, shift within word. ◄		
			OPTION II: *F because of clash with verum focus.	

Note that the claim that option II in (3-9) is unacceptable because of the clash with verum focus is quite well motivated. It is supported by the fact that in the corresponding infinitival constructions, option II can realize anteriority focus.[19] Since verum focus and hence, clash of verum focus with anteriority focus, can only occur in finite verb constructions, our account predicts that option II in infinitival constructions should be able to express anteriority focus. This prediction is borne out as shown in (3-10).

(3-10) a. Er kann Schnupfen gehabt HAben
he can cold had (to) HAVE
*verum focus
anteriority focus
*content focus

b. Er kann Schnupfen geHABT haben
he can cold HAD (to) have
*verum focus
anteriority focus
*content focus

Thus, the occurrence of focus effects can be explained in present perfect constructions with content-rich verbs as well as with content-poor verbs. Specifically, we arrive at the following picture, where the complex consisting of the past participle morpheme and the auxiliary is identified as a semantic component expressing anteriority.

19 Dieter Wunderlich (pc e-mail) suggested to me to try out the effects of focus positioning in infinitival constructions.

(3-11) V + [anteriority PAST PART. + [auxiliary *haben* / auxiliary *sein*]] + PRES

The contrast between (3-2b) and (3-3) suggests that anteriority focus is realized on the participle only when it cannot get mixed up with content focus, i.e. when the verb is relatively contentless, like *haben* in (3-3a) or the copular verb in (3-3b). Thus, on some relevant semantic level, the past participle morpheme and the auxiliary must count as a unit expressing anteriority.[20]

This result amounts to the natural assumption that at some point during its development, the perfect construction must have been subject to a process of grammaticalization or reconstruction - an assumption that has to be accepted in any case, considering the development of the construction in more detail (see, for instance, Öhl (1996)).

As Karin Donhauser (pc) pointed out to me, the observations concerning focus realization are also compatible with the assumption of an even more complete grammaticalization or reconstruction process as indicated in (3-12).

(3-12) [anteriority of V V + PAST PART. + [auxiliary *haben* / auxiliary *sein*]] + PRES

(3-12) amounts to an analysis according to which the original morphosyntactic components of the perfect construction (with the exception of the tense) are reconstructed to a completely noncompositional unit semantically. This analysis predicts that (disregarding the restrictions imposed by realization principles as introduced above), anteriority focus can in principle be put on three different components - namely, either on the auxiliary or on the past participle morpheme or on the verb stem. Hence, it could explain the positioning of anteriority focus accent in content-poor verb constructions like (3-3) by adding a third option to (3-9):

(3-9') Anteriority focus in present perfect constructions with content-poor verbs

MORPHOSYNT. SURFACE UNITS				
NP	V	PART. M.	AUX	PRES
Schnupfen	**hab-**	**ge...t**	**hab-**	**-t**
	ANTERIORITY			
SEMANTIC UNITS				
	OPTION III: **F** (No clash with content focus!)			

The application of this third option to content-rich verb constructions would, of course, lead to a clash with content focus:

20 Perhaps the two items have the option of counting as a unit also syntactically, cf. *[Gelesen haben] wird Hans das Buch*, depending on how this sentence is to be analyzed.

(3-6') Anteriority focus in present perfect constructions with content-rich verbs

MORPHOSYNT. SURFACE UNITS			
V **lüg-**	PART. MORPH **ge...en**	AUX **hab-**	PRES **-t**
	ANTERIORITY		
SEMANTIC UNITS			
OPTION III: *F because of clash with content focus.			

However, for semantic reasons, it seems unlikely, that the analysis displayed in (3-12) is more adequate than the one in (3-11): if only the complex consisting of the verb and the past participle and the auxiliary taken together could express anteriority, then it would be surprising that we have semantic access to the content of the verb alone. That we do have this access cannot be ignored; the possibility to refer to the situation time of the verb and to specify it by positional adverbials could not be explained otherwise. Hence I conclude that the analysis in (3-12) is not tenable.

4. The role of the present tense in present perfect constructions

Let us now turn to the role of the present tense in present perfect constructions. It is well-known that the present tense can be used in different ways in German - e.g. for the description of present situations, of past situations (in historical present tense contexts like reports), and of future situations. It can also be exploited for generic or habitual assertions, which can probably be viewed as special cases of present situations.

(4-1) PRESENT TENSE FOR PRESENT SITUATIONS
a. Maria studiert (jetzt) in Berlin.
Maria studies (now) in Berlin
b. Männer sind klüger als Frauen, und die Erde ist eine Scheibe.
men are smarter than women, and the earth is flat
c. Hans raucht.
Hans smokes

(4-2) PRESENT TENSE FOR PAST SITUATIONS ('historical present tense')
a. 1914 beginnt der erste Weltkrieg.
1914 begins the first worldwar
b. 1996 findet die erste Tagung der Gesellschaft für Semantik statt.
1996 takes-place the first conference of the Gesellschaft für Semantik

(4-3) PRESENT TENSE FOR FUTURE SITUATIONS
a. Im Juni hat Maria Ferien.
in June has Maria vacation
b. Maria kriegt Ferien.
Maria gets vacation

There are some more subtle uses of the present tense in German[21], but for now I want to leave it at this and try to characterize the semantics of the present tense. Of course, it would be highly desirable to assume a maximally uniform account of all uses of the present tense. However, it is not clear how they can be given a uniform account. The following proposals can be found in the literature.

While Klein (1992, 1994) proposes that the present tense locates the topic time around the time of utterance, Fabricius-Hansen (1994), for instance, suggests that the present tense creates a direct association of the situation time of the verb with the time of utterance. According to Kratzer (1978), the present tense is a non-past tense and thus locates the situation time either in the present or in the future. However, in order to be able to account for uses like the historical present tense, Kratzer assumes that times other than the actual time of utterance can "count" as the time of utterance. Contrasting with the accounts mentioned so far, Vater (1983) pursues an aspectual account of the present tense; he argues that the present tense signals that the situation time is not yet completed at the time of utterance. Finally, some linguists, like Heidolph et al. (1981), Zeller (1994), and Grewendorf (1995) propose that the present tense is temporally neutral, i.e. does not locate anything - neither the situation time of the verb nor the topic time - relative to the time of utterance.

At this point, we cannot evaluate these proposals in detail. Rather, we will only use one of them and - without expecting this to be the most adequate solution - for the present purpose assume that the present tense locates the topic time in the present or in the future time, relative to the time of utterance. This amounts to an account in Klein's terms which is similar to Kratzer's account insofar as it generalizes over present time and future time uses of the tense. There is much more to be said about this issue, of course, but for now the account seems adequate enough.

Independently of particular accounts of the present tense in German, however, it is important to note that the present tense shows an interesting behavior with regard to the availability of future time readings: although the German present tense generally allows for future readings, activity and state predicates like *laufen* ('run') with a present tense allow for such a reading only when they occur with a future adverbial as in (4-4c), but not when they occur without an adverbial as in (4-4a). Contrasting with this, achievement and accomplishment predicates like *gewinnen* ('win') can always get a future time reading, regardless of whether they occur together with a future time adverbial as in (4-4c) or without on as in (4-4b) (cf. Ehrich (1992:69)).

(4-4) a. FUTURE READING NOT POSSIBLE: Hans läuft.
Hans runs

b. FUTURE READING POSSIBLE: Hans gewinnt.
Hans wins

c. FUTURE READING POSSIBLE: Hans läuft morgen mittag.
Hans runs tomorrow at-noon

d. FUTURE READING POSSIBLE: Hans gewinnt morgen mittag.
Hans wins tomorrow at-noon

This interaction between *Aktionsarten* and the availability of interpretations of the present tense should be kept in mind; it will become important in the next section.

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21 For more information on this, see, for instance, Fabricius-Hansen (1986) and Thieroff (1992:89ff).

5. TS-specification and R-specification by positional adverbials

In section 1 it was mentioned that positional adverbials can be used in perfect constructions in at least two different ways - as TS-specifiers or as R-specifiers. This is illustrated with the ambiguous German sentence (5-1), repeated from above.

(5-1) Er war *um zehn* weggegangen.
he was/had at ten left
TS-SPECIFICATION: = The leaving took place at 10.
R-SPECIFICATION: = He was gone at ten.

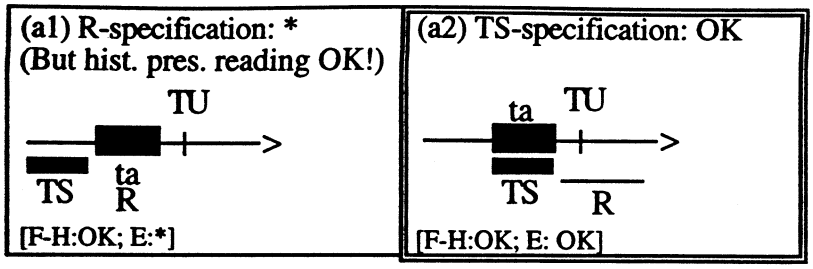
In this section, we will take a closer look at the ways in which present perfect constructions can interact with positional temporal adverbials. We will see that the interactions are elucidating with respect to the semantics of the present perfect. Specifically, the interactions will show that the present tense contained in present perfect constructions is a real, standard, present tense, that present perfect constructions are of a stative nature, and that certain accounts of the present perfect - accounts that assign the present perfect a past tense denotation or a past tense reading among others - are not tenable.

Since the present perfect and the past perfect are constructed analogously, one would expect that positional temporal adverbials are ambiguous between a TS-specifier reading and an R-specifier reading in present perfect constructions, too. Quite surprisingly, however, their appropriateness as TS-specifiers or R-specifiers depends on whether they are past, present, or future adverbials.

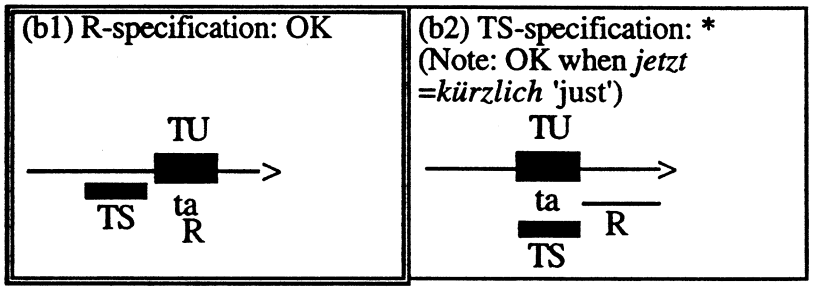
The observation that there are some such restrictions on the use of temporal adverbials with the present perfect is not new, yet, the specific nature of the restrictions has been described quite inconsistently in the literature. Moreover, there does not seem to be any obvious explanation for the restrictions. Ehrich (1992:145) says that a present perfect sentence with a past adverbial - *Hans hat den Rasen vorhin/gestern gemäht* ('Hans has mown the lawn a while ago/yesterday') - only allows for TS-specification but not for R-specification. But in combination with future adverbials - as in *Hans hat den Rasen gleich gemäht* ('Hans has mown the lawn in a bit') - there is an ambiguity between TS- and R-specification, Ehrich claims. Fabricius-Hansen (1986) makes the opposite claim. According to her, a future adverbial blocks TS-specification (p112f), while constructions with past adverbials are ambiguous (p115). However, it seems to me (and to the informants I asked) that neither of these statements is completely right. Rather, the judgements about the availablity and unavailability of readings are the ones displayed in (5-2).[22]

(5-2) a. PAST ADVERBIAL: Hans ist *gestern um zehn* weggegangen.
Hans is/has yesterday at 10 left
1. R-SPECIFICATION: ≠ Yesterday at 10, Hans had already left.
2. TS-SPECIFICATION: = Yesterday at 10, his leaving took place.

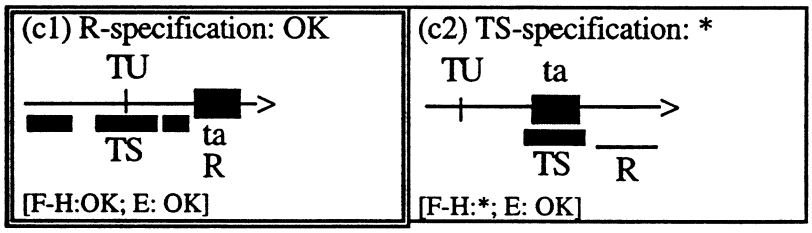
22 The judgements exploited here in part correpond to the ones sketched in Herweg (1990:199ff); he finds R-specification with future adverbials and TS-specification with past adverbials acceptable. However, for present adverbials, he finds TS-specification more acceptable than R-specification. - In the pictures, "ta" represents the time of the temporal adverbial.



b. PRESENT ADVERBIAL: Hans ist *jetzt* weggegangen.
Hans is/has now left
1. R-SPECIFICATION: = At this moment, Hans is already gone.
2. TS-SPECIFICATION: ≠ At this moment, his leaving takes place.



c. FUTURE ADVERBIAL: Hans ist *morgen um zehn* weggegangen.
Hans is/has tomorrow at 10 left
1. R-SPECIFICATION: = Tomorrow at 10, Hans will have left already.
2. TS-SPECIFICATION: ≠ Tomorrow at 10, his leaving will take place.



Note that it is unexpected that the three readings (a1), (b2), and (c2) are unavailable for the following reason: from (a2), we know that temporal adverbials can be TS-specifiers in present perfect constructions; from (b1), we know that they can be R-specifiers; and from (c1), we know that the situation time of the verb in present perfect constructions can be located in the future. Hence, we expect that all six readings be available. Why do they not behave as one would expect?

It turns out that there is a quite natural explanation for the unavailability of the readings. Recall from the preceding section that activity and state predicates in the present tense need a future temporal adverbial in order to have future interpretations. I will show that the distribution of possible readings for present perfect clauses follows from this standard behavior of the present tense, if we assume that present perfect constructions are stative.

The assumption that present perfect constructions are stative is well-motivated and by no means a new discovery (see Parsons (1990) and Vlach (1993)). Thus, the application of standard tests provides evidence for the stative nature of the construction. For instance, one can ask *how-long*-questions about the duration of states or activities, but not about achievements or accomplishments. Note that consequently, (5-3a) is not acceptable: it is a question about the duration of an

achievement in the past tense. When the past tense is changed into a present perfect, however, focus triggers a difference in acceptability. When focus is on the auxiliary, then the resulting sentence is fine. When the focus is somewhere else, then the sentence is unacceptable. Note that focus on the auxiliary tends to relate temporal adverbials to the present perfect as a whole (R-specification), while focus that is not on the auxiliary relates the temporal adverbial to the verb and its situation time only (TS-specification). If that is so, then (b) and (c) show that the verb does not denote a state whereas the present perfect construction does.

(5-3) a. ?*Wie lange entdeckte Hans den Fehler?
how long discovered Hans the mistake
b. ?*Wie lange hat Hans den Fehler entdeckt?
how long has Hans the mistake discovered
c. Wie lange HAT Hans den Fehler entdeckt?
how long HAS Hans the mistake discovered

The same conclusion can be reached by other tests, too. Thus, (5-4) shows a kind of pseudo-cleft construction. The idea behind this test is that the *what-Hans-did*-construction is unacceptable with states because states are not done. But it is acceptable with all other *Aktionsarten*. Note that when we have a perfect infinitive, the construction is not permitted and thus behaves like a state. However, the same infinitive without the perfect is good, i.e. it does not behave like a state.

(5-4) a. ?*Was Hans tat, war, den Fehler entdeckt zu haben.
what Hans did was the mistake discovered to have
b. Was Hans tat, war, den Fehler zu entdecken.
what Hans did was the mistake to discover

To summarize, there is strong evidence that perfect constructions denote states. But what is the nature of this state?

Parsons' characterization of the "perfect-state" as a RESULTANT-STATE as opposed to a target-state seems most suitable. The difference between these two kinds of states is nicely explained in Parsons' book (1990:235):

> "It is important not to identify the Resultant-state with its 'target'-state. If I throw a ball on the roof, the target state of this event is the ball's being on the roof, a state that may or may not last for a long time. What I am calling Resultant-state is different, it is the state of my having thrown the ball on the roof, and it is a state that cannot cease holding at some later time."

Thus, the resultant-state may be described as a post-state of the crucial situation, which according to what we said above, may be just one truth-interval out of the whole situation time.

Note that our result that present perfect constructions are stative is not compatible with accounts of the present perfect that assume a general denotation or one reading of the present perfect where it is not stative; this is because if there was a non-stative reading of the construction available, then the availability of this reading would be enough to save the construction in (5-4a) from unacceptability. Perhaps one might consider the logical possibility that such a non-stative reading is unavailable only in certain environments - for example in the environment of (5-

4a).[23] But at present I do not see a plausible motivation for this assumption at all. Thus, I conclude that present perfect constructions are stative in general. Next I will show that the availability of the readings displayed in (5-2) follows from the stative nature of the construction.

Quite importantly, in combination with the restriction on the availability of future readings with present tenses in stative or activity clauses (which was illustrated in the preceding section), we expect that the present tense component in the present perfect construction needs future adverbials in order to get a future interpretation, simply because the present perfect is of a stative nature. How does the availability of readings follow from this? Let's apply our previous results to the unavailable readings in (5-2).

First, note that the oddness of (a1) corresponds to what we would expect if we consider the behavior of the present tense. In order to get the reading (a1), the reference time R has to be located in the past. Given that R is associated with the present tense auxiliary, the location of R in the past is a special case of an historical present tense. Hence, we expect that its location in the past feels like the historical present tense and is subject to the same restrictions. This prediction corresponds exactly to the intuitions about the reading.[24]

Second, we have just seen that the present perfect construction as a whole is stative. Thus we predict that it needs a future adverbial in order to obtain a future meaning with present tense. In order to get reading (c2), the present perfect construction must have a future meaning. Thus, the future adverbial that occurs in the clause has to function as an R-specifying adverbial. But if the adverbial functions as an R-specifying adverbial, then it cannot function simultaneously as a TS-specifying adverbial. Hence, we correctly predict that the reading in (c2) is unavailable.

Finally, in order to get the reading in (b2), the time of the present perfect construction must be located in the future, too. If it is not, then the situation time of the verb cannot be located around the time of utterance. Again, since it is stative, it needs a future adverbial in order to be interpretable in this way. The clause, however, does not provide a future adverbial. Hence, similarly to reading (c2), reading (b2) is not available, either.

To summarize, we have seen that in some important respects, the present tense contained in present perfect constructions behaves just like a canonical present tense. In particular, its ability to exploit future readings is exactly like the one of a canonical present tense. Moreover, we have seen that the present perfect construction is of a stative nature, and that this is so always and obligatorily. We have identified the state as the resultant-state or post-state of the situation denoted by the verb or VP.

6. Conclusion

At this point, one may ask whether in an account as sketched above, the reference time R still plays an independent role. Since the semantics of the perfect construction itself provides us with two time intervals - the one of the situation time of the verb and the one of its resultant-state - one may argue that reference to R has become unnecessary. However, since I want to pursue the basic idea of Klein's (1992, 1994) analysis of aspect, I will keep a reference time R as a component of temporal

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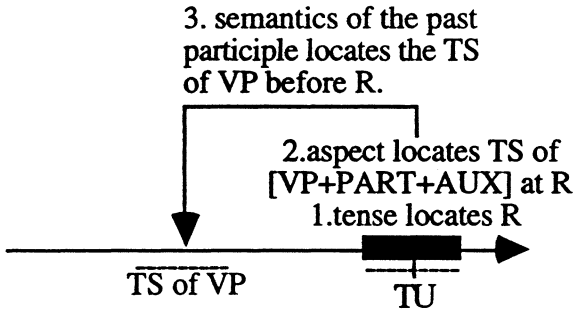
[23] Chris Piñón hinted at this possibility (pc); however, so far I do not see any evidence in favor of this.

[24] Note that this accounts for Fabricius-Hansen's judgement that this reading is available.

interpretation. Hence, until we find evidence to the contrary, let us assume that in the canonical case, tense locates a reference time R in relation to the time of utterance TU, and aspect locates the situation time TS relative to the reference time R.[25] Note, however, that this notion of reference time differs from Reichenbach's notion of reference time.

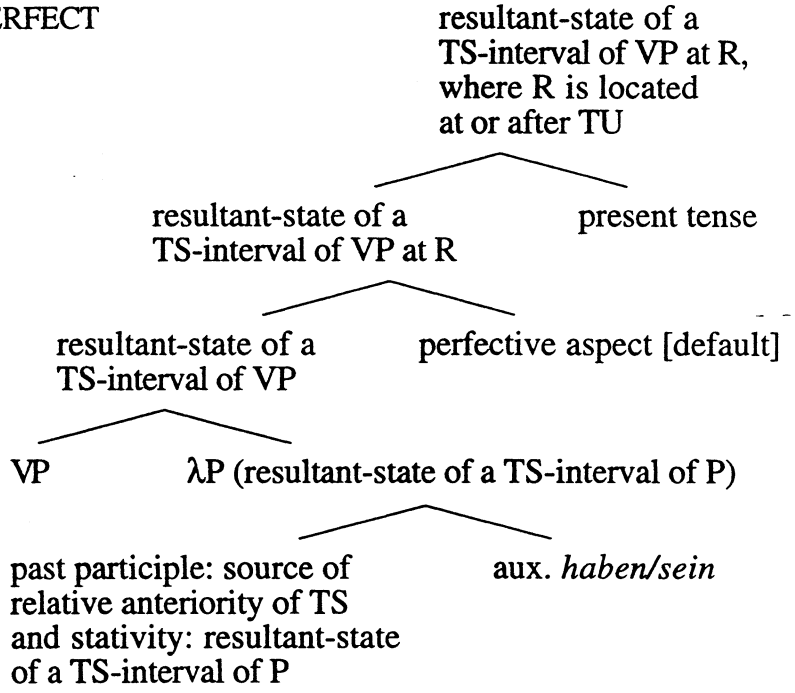
Moreover, it is important to stress which situation time is located by aspect in perfect constructions: it does not locate the situation time of the verb itself; rather, it locates the situation time of the complex consisting of the VP, the past participle morpheme, and the auxiliary - hence, the situation time of the resultant state of VP. The picture in (6-1) illustrates how this works.

(6-1)



To summarize, in the course of this paper, we have arrived roughly at the following picture of the semantics of the present perfect in German.

(6-2) PRESENT PERFECT

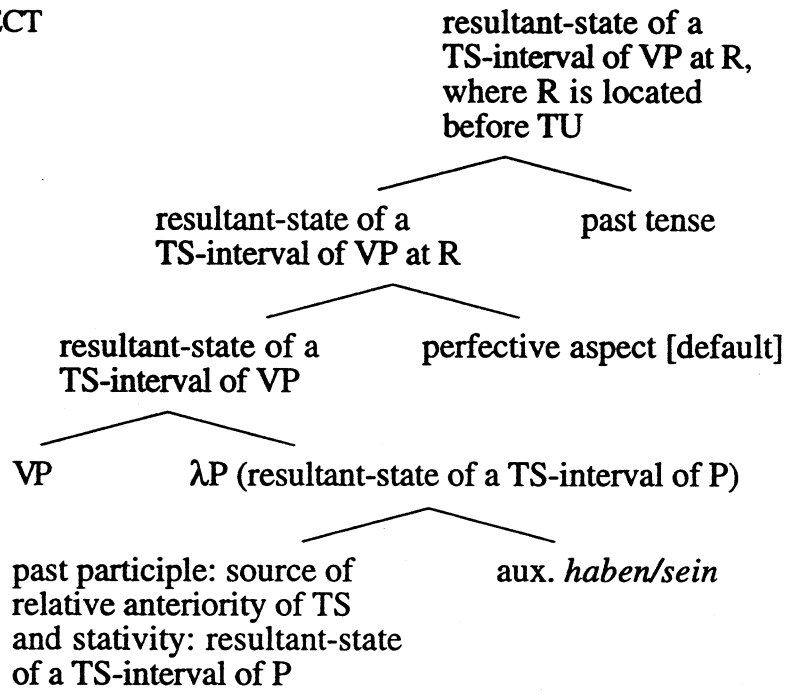


[25] Given that aspect is not in general morphosyntactically realized in German, one may rather pursue an account in which aspect does not occur as a functional element. If one chooses this latter theoretical option, then one has to change the assumptions about the semantics of tense, of course. Specifically, one may assume that tense locates a (relevant) truth-interval of its clause with respect to the time of utterance.

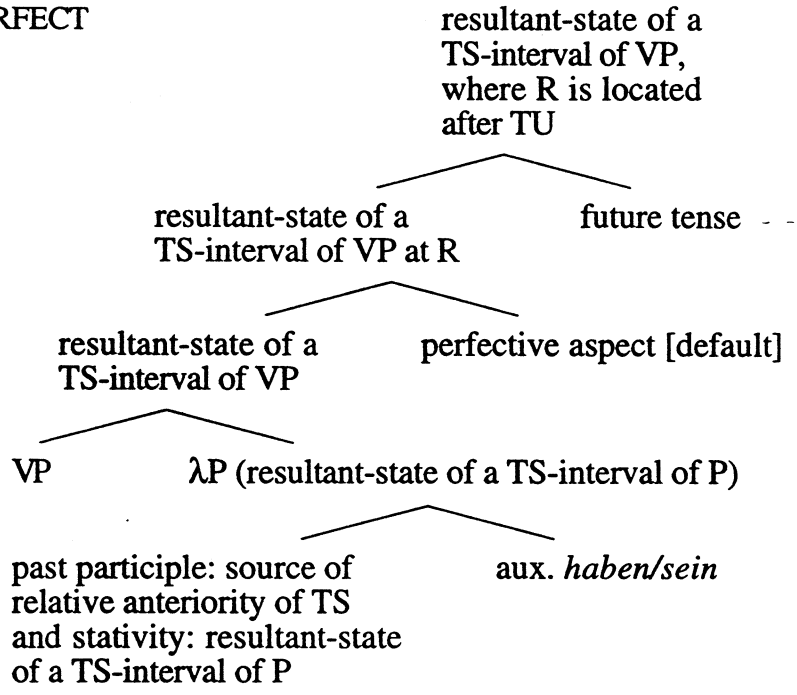
These results were established by exploiting the historical development of the construction, its behavior when combined with focus and focus projection, and interactions of the present perfect with temporal adverbials.

Unless we find counterevidence, we may assume that the semantics of the past perfect and of the future perfect is constructed analogously as shown in (6-3) and (6-4), respectively.

(6-3) PAST PERFECT



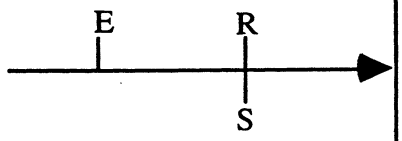
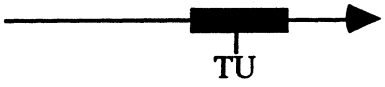
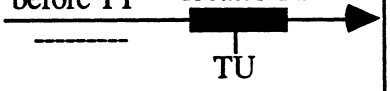
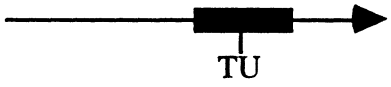
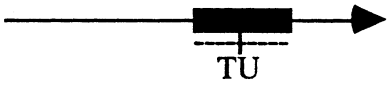
(6-4) FUTURE PERFECT



Recall that we began this paper with a brief summary of the accounts of Reichenbach (1947) and Klein (1992, 1994). As should be clear by now, the two accounts treat the present perfect in quite different ways than the present account. Reichenbach treats the present perfect (in English) as consisting of a single semantic component tense that temporally locates the three times speech time S, event time E,

and reference time R in a specific constellation to each other. Klein splits up the present perfect (again, in English) semantically into two components: the tense, which locates the topic time TT with respect to the time of utterance TU, and the aspect, which locates the situation time TS with respect to the topic time TT. The present account, however, splits up the present perfect semantically into three components: the tense, which locates the reference time R with respect to the time of utterance TU, the aspect, which locates the situation time TS with respect to the reference time R, and the denotation of the past participle morpheme in combination with the auxiliary. The table in (6-5) shows a survey of how the three accounts work.

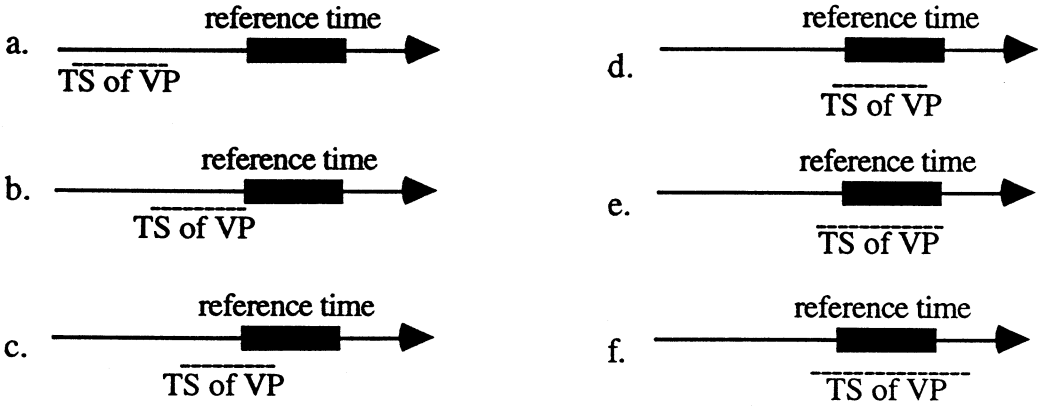
(6-5)

REICHENBACH (1947)	KLEIN (1992, 1994)	THIS ACCOUNT
present perfect: 1 semantic component	2 semantic components	3 semantic components
tense "present perfect"  	**1.tense** 1.tense locates TT  **2. aspect** 2.aspect locates TS of VP before TT 1.tense locates TT  	**1.tense** 1.tense locates R  **2. aspect** 2.aspect locates TS of [VP+PART+AUX] at R 1.tense locates R  **3. denotation of [PART + AUX]** 3. the semantics of the past participle locates the TS of VP before R. 2.aspect locates TS of [VP+PART+AUX] at R 1.tense locates R 

Note that while tense and aspect are generally treated as functional categories, the status of the past participle morpheme in combination with the auxiliary may be a quite different one in the grammatical system. Specifically, it seems likely that the past participle morpheme is a derivational affix, while tense and aspect are inflectional. This is in accordance with the widespread assumption that past participles are adjectival rather than verbal - i.e., according to this view, the past participle morpheme triggers a change of the syntactic category, which is typical for derivational processes.

Finally, recall the various options concerning the possible time relations between the evaluation time of a past participle and the situation time of the verb contained in the past participle; they were displayed in (2-5) above. Let us briefly consider what these options amount to with regard to the occurrence of past participles in perfect constructions. As argued above, the semantics of the past participle locates the situation time of the verb before the reference time. Thus, one may say that the reference time plays the role of the evaluation time of the past participle in perfect constructions. As in other constructions containing past participles, only an interval of the verb's situation time must be located before the evaluation time. Hence, all the temporal relations illustrated in (6-6) are in principle acceptable for the reference time and the situation time of the verb.

(6-6)



The analysis we have established provides a basis for further investigation of problems concerning the present perfect - for instance, of the question of how the different readings of the present perfect come about. The semantics that I proposed in this paper is arguably subject to some independently motivated principles of temporal semantics as well as to well-established pragmatic principles. These principles can be exploited in order to analyze the temporal and aspectual flavors that occur with present perfect constructions. This analysis, however, has to be dealt with in another paper (Musan (in progress)).

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Connectivity Effects in Pseudo Cleft Sentences*

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1 Introduction

In his 1973 dissertation, Roger Higgins revealed how difficult it is to analyze cleft constructions without making too many construction specific assumptions. Sometimes it might even be difficult to decide whether a particular assumption is construction specific or not. A case in point is Higgins' main thesis, which he calls the Null Hypothesis stated in (1):

(1) *Higgins' Null Hypothesis:*
"The surface structure of a specificational pseudo cleft sentence is essentially identical to its deep structure form." (Higgins 1973: 22)

In modern terminology this means that S-structure and LF must coincide in all relevant respects. Since by definition a Null-Hypothesis can not actually be a principle (of grammar), it is plausible to assume that (1) should in fact be a theorem, resulting from deeper principles which in turn do not explicitly mention the specificational pseudo cleft construction.

In this paper, however, I will not be concerned with the theoretical status of (1) as either construction specific or not. Rather I will be concerned with the seemingly much simpler question of whether it is true or false.

I take it for granted that Higgins' arguments against previous analyses were correct. What needs to be examined is the question of whether they are still correct today, against the background of more recent developments. In re-examining some of the problems that arise with (1) and some of the proposed solutions, I will concentrate on the issue of connectivity as discussed by Akmajian (1970), Higgins (1979), Barss (1986), Heycock (1995), and others.

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2 Binding and Connectivity

Let us first analyze the sentences in (2):

(2) a. What nobody$_1$ did was buy a picture of himself$_1$
b. Buy a picture of himself$_1$ was what nobody$_1$ did

Here the obvious problem is that the anaphor is not c-commanded by its antecedent. If I understand Higgins correctly, his general solution to binding problems of this sort is to assume an understood big-PRO-like subject which serves as the local c-commanding antecedent of the anaphor. Accordingly, *buy a picture of himself* has a silent subject-NP which is the antecedent of the anaphor *himself* and which, according to the theory of the early seventies, is erased by an EQUI-NP-deletion rule.

Solutions like the above — as well as many other proposals involving EQUI- or SUPER-EQUI-NP-deletion — have rarely been made precise, so that Higgins is in good company when treating control as a more or less semantic phenomenon. Nonetheless, such an appeal to other components of grammar is unsatisfactory, for at least three reasons.

Firstly, cases like (3) cannot plausibly be accounted for by an NP-internal subject-PRO.

(3) What nobody$_1$ bought was a picture of himself$_1$

Higgins demonstrates that *picture* nouns behave somewhat exceptionally anyhow, but this fact alone cannot be considered a solution to the problem.

Secondly, and most importantly, even if we grant an invisible subject, Higgins does not explain how this subject can in turn be bound by its antecedent. To illustrate, consider the structure in (4):

(4) [What nobody$_1$ did] was [PRO$_1$ buy a picture of himself$_1$]

The relevant observation here is that the antecedent is a quantifier, and that binding by a quantifier is possible only in a configuration of c-command. This is made explicit in the Binding Hypothesis formulated in (5):

(5) *The Binding Hypothesis:*
For a pronominal to be semantically interpretable as a bound variable, it must be c-commanded by its binder.

Unless one is prepared to postulate Quantifier Raising out of a relative clause — which seems to be a wild and unmotivated device — the Binding Hypothesis simply contradicts Higgins' Null Hypothesis.

Thirdly, the behavior of anaphors seems to be governed by the derivational history of movement within the free relative. This has been shown by Barss (1986) in his dissertation, from which I have taken the examples in (6):

(6) a. [What$_i$ *John* wants [*Mary* to paint t_i]] are pictures of himself/herself
b. [What$_i$ *Joyce and Shaw* believed [I like t_i]] are each other's plays

The point is that the anaphoric possibilities cannot be determined by the base position of *what* alone. If this were true, sentence (b) would be ungrammatical, and sentence (a) would not permit *himself*. However, if we analyze *what* as having the same content as the post copular phrase, the observed binding possibilities could be explained.

By contrast, Higgins' explanation would have to be that the relevant properties of EQUI-NP-deletion must, in cases like these, be identical to the conditions of Binding Theory. This, however, strongly suggests that a generalization has been missed. Apparently, the behavior of anaphors in these constructions does not depend on an obscure theory of control, but directly on Binding Theory itself.

However, as Barss himself has shown, this conclusion does not contradict Higgins' Null Hypothesis. This is because Barss reformulated Binding Theory in a representational way, such that the relevant properties can be checked at the surface level (which is, according to Higgins, identical to LF.) I will return to this in Section 7.

Finally, there are a number of principle (C) effects which could easily be explained on the basis of Barss' theory but which might remain problematic on the basis of Higgins' account. First consider examples like (7) from Bach (1969) and (8) from Higgins:

(7) *What he$_1$ smashed was John's$_1$ car

(8) *What he$_1$ discovered was a proof of Descartes'$_1$ existence (okay with predicational reading)

The ungrammaticality of coreference in these sentences corresponds with that of their unclefted counterparts. This clearly calls for an analysis in terms of obligatory reconstruction, which is indeed independent of any understood subject mechanism. The following data from Heycock (1995) confirm this conclusion. Consider first the contrast in (9):

(9) a. [How many lies aimed at exonerating Clifford$_i$]$_j$ did he$_i$ claim that he$_i$ had no knowledge of t_j
b. *[How many lies aimed at exonerating Clifford$_i$]$_j$ is he$_i$ planning to come up with t_j

The contrast does not lie in the surface structure of the clauses; rather it is the semantics of the embedded verbs that makes the difference. In (b), the verb is intensional, and any meaningful interpretation of the sentence must reconstruct the *wh*-phrase into its scope. The verb in the (a)-sentence, however, is extensional, hence no reconstruction is called for and coreference is grammatical. But consider next the parallel cleft constructions in (10) and compare (9-a) with (10):

(10) *What he$_i$ claimed that he$_i$ had no knowledge of were lies aimed at exonerating Clifford$_i$

Although coreference is okay in the transparent unclefted construction, it must be ruled out in the also transparent cleft construction. This behavior is explained if reconstruction of *what* in clefts is obligatory. Although this assumption in and of itself deserves an explanation, it should be noted that this is exactly what Barss assumes when dealing with condition (B) effects like (11):

(11) a. *What John$_i$ is is proud of him$_i$
b. *What John read was a book about him$_1$
(okay only on predicational readings)

Note also that at the time of Higgins' dissertation any explanations via reconstruction would have been inconsistent with his Null Hypothesis; so the question is whether alternative explanations are available. When discussing examples like (7) and (8), Higgins seems to subscribe to the view that backwards anaphora is restricted to a special context that requires the referent to be already known or given. Arguing along these lines, he cites Hankamer's rule stated as (12):

(12) *Hankamer's Conjecture:*
All pronominalzation is from left to right.

Higgins comments:

(13) "Hankamer's conjecture may well be too strong, but Specificational pseudo cleft sentences probably fall into the class of cases which can be explained by it." (Higgins, p. 316)

He also cites examples showing that backwards pronominalization is ungrammatical even though it is okay in the unreconstructed form:

(14) *What the man who lived next door to him$_i$ also discovered was a proof that Descartes$_i$ existed

The point is that the ungrammaticality of (14) cannot be explained by condition (C), regardless of whether or not we reconstruct.

On the other hand, inverted structures like (15) show the same reconstruction effects, although this time Hankamer's rule cannot work:

(15) a. *John's$_i$ car was what he$_i$ smashed
b. *Shave John's$_i$ beard was what he$_i$ forced Mary to do

We conclude from (15) that applying condition (C) at a reconstructed LF still yields correct results, although examples like (14) suggest that additional factors might also come into play.

In search of a unifying explanation, Higgins briefly discusses an alternative to Hankamer's rule. It relies on the meaning of a pseudo cleft as specifying a *list*. He observes that something from within a list can never pronominalize an element outside it. This

is exemplified in (16):

(16) *He$_i$ discovered the following: Mary's books, John's$_i$ trousers, ...

I am not convinced, however, that this is entirely satisfying. For one thing, the generalization itself is still left unexplained; for another, I do not see how the widely shared semantic intuition that *lists* are essential for the semantics of the construction under discussion can be justified. Firstly, this assumption introduces a very construction specific property which does not become apparent from a mere inspection of the surface. Secondly, it does not square well to the connectivity effects we observed with anaphors and negative polarity items to be discussed further below. Thirdly, I do not see why lists should do better than sets: For sure, lists are ordered sets, but it is precisely this aspect of an ordering which never plays a role in any explanation based on lists. For sure, we sometimes allude to *incomplete* or *open* lists, and it seems to be a commonly shared intuition that clefts specify *complete* list. However, this difference has no counterpart with sets: we simply do not have any notion of an *incomplete set*. Since sets are "complete" by definition, it seems to me that a proper formalization cannot take advantage of the concept of a list, but should proceed in terms of sets, as one would expect from ordinary model theoretic semantics.

Putting aside the issue of lists, the least one can say by now is that the application of condition (C) at a reconstructed level is consistent with the observed facts. This is an important observation: If reconstruction is obligatory, as suggested by Barss in order to account for condition (B) effects, then we would expect that condition (C) likewise holds after reconstruction, and this is exactly what we have seen above.

Summarizing so far, the evidence we collected suggests that the Binding Theory depends on reconstruction and must therefore apply at a level different from surface structure. Although this seems to contradict the Null Hypothesis, Barss has shown how to reconcile these requirements with Higgins' thesis: By reformulating Binding Theory in such a way that the effects of movement and reconstruction are captured at S-structure, Barss provides a necessary step in showing that there is no need to postulate an LF that differs from surface structure. However, what remains troublesome is the semantic issue, namely the conflict between the Null Hypothesis and the Binding Hypothesis. That is, Barss' theory would be undermined if it turned out that reconstruction is necessary for independent semantic reasons. Before demonstrating that semantic binding does not require c-command, let us look at two further arguments in favor of reconstruction.

3 Negative Polarity

Another well known problem is NPIs as exemplified in (17):

(17) [What John$_1$ *didn't* do] was buy *any* picture of himself$_1$

The surface structure of (17) seems to contradict the commonly held view that *any* must be in the scope of and c-commanded by negation. This view implies the necessity of reconstruction.

By way of generalizing the Binding Condition we thus arrive at the Scope Condition given in (18):

(18) *The Scope Condition:*
NPIs as well as bound variables must be the scope of (i.e. c-commanded by) the operators they depend on.

Cleft constructions show that this condition cannot be met at S-structure, hence a solution is called for that seems to contradict Higgins' Null-Hypothesis.

Moreover, clefts exhibit an interesting asymmetry that emerge in inverted structures like (19):

(19) *Buy *any* picture of himself$_1$ was [what John$_1$ *didn*'t do]

Observe that the example was chosen in such a way that reconstruction is independently necessary for the binding mechanism to work properly. It thus follows that the reason for the contrast between (19) and (17) must be a linear precedence condition that holds for NPIs at surface structure, but is apparently irrelevant for anaphors or bound variables (cf. sentence (2-b)). Note that a certain precedence condition is already contained in Ladusaw's Polarity Hypothesis stated in (20):

(20) *The Polarity Hypothesis* (Ladusaw, 1980, p. 112):
"A NPI must appear in the scope of a trigger (a downward entailing element). If its trigger is in the same clause as the NPI, the trigger must precede the NPI."

Ladusaw restricted precedence to elements of the same clause because he was aware of examples like (21), where the NPI precedes the negative verb:

(21) [That *anyone* invited her on Monday] Mary *forgot*

Here the negative trigger is not in the same clause as *anyone* and therefore must be allowed to precede the NPI. However, if we adopt Progovac's (1993) analysis — namely that there is something inherently negative in the COMP position of sentential complements of certain downwards entailing verbs, and that this invisible element of the fronted clause is the trigger for the NPI — the *if*-clause in Ladusaw's condition can be dropped. We may thus generalize the condition by saying that the trigger must *always* precede the NPI. This explains the contrast between (17) and (19): in the grammatical sentence (17) the trigger precedes the NPI, whereas in the ungrammatical (19), the NPI precedes the trigger.

Chris Wilder (p.c.) kindly provided me with more data that illustrate the relevance of precedence:

(22) a. *Any picture of Fred was what John didn't buy

b. *Steal anything was what nobody did
c. *Pictures of anyone John didn't buy.
d. *It was pictures of anyone that John didn't buy
e. *Pictures of anyone are easy to ignore
f. *... but steal anything, nobody did

Since reconstruction reverses the surface order, it is obvious that the *linear* licensing condition must apply at the level of surface structure. On the other hand, it seems that the *structural* licensing condition for *any* is not met at the surface of pseudo clefts. This again calls for a solution in terms of an LF that differs from the surface.

On the other hand, we could assimilate the licensing conditions for *any* to the binding conditions for anaphors as stated by Barss. I will now demonstrate that this is in fact a plausible conclusion.

One piece of evidence is derived from NPIs other than *any*. For example, although sentence (23-a) is perfectly grammatical, the corresponding cleft in (23-c) is not:

(23) a. John didn't give a talk until he was 25.
b. *John gave a talk until he was 25.
c. *What John didn't do was give a talk until he was 25.

Here again it is the surface structure that counts. Marcel den Dikken pointed out to me that the same might be true for idioms. For example, the idiomatic interpretation is lost in (24):

(24) What Mary didn't lift was a finger

These findings militate against a pure LF account of negative polarity in general. Thus, one might argue that the above counterexamples call for S-structure locality, whereas *any* requires locality at LF. However, such a solution would, perhaps unduly, multiply levels beyond Occam's razor. Moreover, evidence from positive polarity also speaks against such a conclusion. To this I turn in the next section.

4 Positive Polarity

Note first that the local licensing of NPIs is sensitive to the scope of quantifiers at LF. Linebarger (1987) gives the following examples:

(25) a. *John didn't give *a red cent* to every charity
b. *She didn't wear *any* earrings to every party
(Available reading: Wide scope of *any* over *every*) NOT available for (b):
It wasn't to every party that she wore any earrings

At S-structure the NPI is as close to the negation as can be; nonetheless, the reading with *every* having wide scope over the NPI is impossible. This can be explained by looking at LF, where the quantifier is closer to the negation than the NPI. This produces

an intervention effect: there is an intervening operator between the NPI and its licenser which blocks the strictly local licensing requirement of the NPI.

Interestingly enough it turns out that a switch from the negative to the corresponding positive polarity item *rules in* the previously unavailable reading. For example, compare (25-b) with (26), which seems fairly acceptable in the intended reading:

(26) ?She didn't wear *some* earrings to every party

This is unexpected if we check licensing conditions only at surface structure where the positive polarity item is immediately preceded by the negation. We must conclude, then, that LF is the relevant level not only for *any* but also for positive PIs. Accordingly, the PPI *some* is grammatical in (26) because at LF an operator intervenes.

Given all this, consider next (27):

(27) What John (also) didn't do was drink any/some wine

The grammaticality of both *some* and *any* in this context is unexpected if the LF of the sentence involves (obligatory) reconstruction. This observation supports Higgins' thesis. If the locality condition for *some* must be checked at LF — as suggested by (26) — then this LF should be identical to the surface, for otherwise the PPI would be in the immediate scope of negation. On the other hand, given that no syntactic reconstruction is involved, the licensing conditions of *any* seem to go hand in hand with that of bound variable pronouns, which can be demonstrated by (28):

(28) What nobody$_i$ did was beat some/any (friends) of his$_i$ children

As noted above, the analysis of *some* in (28) would become paradoxical on the view that binding requires reconstruction at LF: such an LF would clearly violate the licensing condition for *some*. I conclude that neither the LF required for binding nor the LF required for *any* can involve real reconstruction, and that the licensing conditions for *some* and NPIs other than *any* can be satisfied only if LF and S-structure are identical.

To summarize this section, the polarity item *any* behaves much like an anaphor in that it can be licensed only via reconstruction. Other PIs, however, are incompatible with reconstruction, although an analysis of their distribution seems to involve considerations of LF. From this I conclude that Higgins' hypothesis is in fact the correct generalization, so that Binding Conditions as well as the locality condition for *any* must be stated in a Barssian way, at a level of LF that is not different from the surface in relevant respects. Given this, it only remains to show how variable binding can be accounted for. Before going into this, I would like to discuss one final argument that was designed to establish a genuine semantic argument in favor of Higgins' thesis.

5 Conjunction

As pointed out by Sharvit (1997), the following pseudo cleft has a cumulative reading:

(29) What John read and what Mary bought is/was Huck Finn, Tom Sawyer, A Connecticut Yankee, and The Prince and the Pauper.

Syntactic reconstruction at LF cannot account for this reading, hence no reconstruction can ever be involved in the analysis of pseudo clefts.

This would, if correct, establish an excellent argument in favor of Higgins' hypothesis. Unfortunately, however, I am not convinced that the argument reveals anything about specificational clefts. Consider first similar examples with predicates that call for a plural subject:

(30) a. What John bought and what Mary bought go together well
b. What John believes and what Mary claims is (mutually) incompatible.

Adopting Schwarzschild's (1991) union theory of coordination we arrive at the correct readings only if the free relative clauses are referring expressions and the entire cleft construction is predicational. Sharvit's example (29) also results from the theory correctly if we analyze the free relatives as terms and the conjunction as a set theoretic union, as shown in (31):

(31) $\{X$: John *read $X\} \cup \{X$: Mary *bought $X\}$ = {Huck Finn, Tom Sayer, A Conneticut Yankee, The Prince and the Pauper}

Here '*' denotes Link's plural operator, cf. Link (1991) or Sternefeld (1994) However, according to Higgins' typology, (29) would be classified as *identificational*. And as is well known, neither predicational nor identificational clefts show the usual connectivity effects.

A genuine testing case would be true specificational sentences, perhaps of the form in (32):

(32) What Max also wanted to buy and what Mary intended to read was a book on syntax and a book on semantics

Due to the presence of the intensional verbs, (32) must be specificational. But now the relevant question is this: do we get a cumulative reading? Unfortunately, I only get the distributional construal, with Max wanting to buy both books.

The conclusion is that the coordination of the free relatives in specificational clefts can not involve a conjunction of terms. This is corroborated by the behavior of reciprocals. First note that these are grammatical in specificational constructions like (33-a) and (33-b), which sharply contrast with the ungrammatical sentences in (33-c) and (33-d):

(33) a. The only people they really liked were each other
(Chomsky (1971))
b. What those two like even more than they like themselves is each other
(from Oren Percuss: Unmasking the Pseudocleft, 1997, unpublished)
c. *What John really liked and what Mary really liked was each other

d. ??What John did and what Mary did was send letters to each other

One might argue that these sentences are out for reasons of agreement; the real testing case should therefore be:

(34) ??What some critics really admire and what some authors really dislike is/are each other

But this, if grammatical at all, only has the distributional reading, with the critics admiring each other and the authors disliking each other.

In conclusion, then, coordinations in real specificational clefts do not, contrary to first appearance, count against a reconstruction account. On the contrary, examples like the above suggest that across the board reconstruction is essential in order to get the semantics right.

It emerges, then, that there are a number of semantic properties that are left unexplained by Higgins' thesis, and these are precisely the properties that would speak against his Null Hypothesis.

6 An *in situ* Semantics for Reconstruction

Now, in order to maintain the Null Hypothesis, we need a surface semantics which solves the connectivity problems in a straightforward way. Any such semantics is in conflict with the Binding Hypothesis (5) and the Scope Condition (18), which therefore must be assumed to be wrong.

A major task therefore is to develop an alternative theory that interprets variable binding at the surface, without c-command. As it turns out, this problem is largely independent of the properties of cleft sentences, hence any solution of it will still satisfy the Null Hypothesis.

In fact, there are several possibilities to interpret variable binding without c-command. A particularly simple solution is implicitly contained in an old paper of Bennett's, cf. Bennett (1979). It is simple because it is very general. Although Bennett does not directly address the issue of interpreting pronouns, his framework easily allows expression of the idea that referential pronouns and bound variables do not have the same meaning. Whereas referential pronouns do, as usual, denote individuals, this no longer holds for bound variable pronouns, whose meaning must be something more complex.

Let us first look at the interpretation of quantified sentences in predicate logic. The usual semantics given to a universally quantified sentence like (35-a) is the metalinguistic statement in (35-b):

(35) a. $(\forall x_1)(P(x_1) \rightarrow Q(x_1))$
b. $(\forall a \in D)(\forall g' \in G)(g'[a/1]g \rightarrow (I_P(g'(1)) \rightarrow I_Q(g'(1))))$

Now, the logical problem with doing semantic reconstruction by means of lambda

conversion at a surface level is that (36-a) is not equivalent to (35). Rather, a logically equivalent alphabetic variant of (36-a) would be (36-b), with x_1 still being free a free variable not bound by the universal quantifier:

(36) a. $\lambda x_2(\forall x_1)(P(x_1) \rightarrow Q(x_2))(x_1)$
b. $(\forall y)(P(y) \rightarrow Q(x_1))$

Lambda conversion is not permitted in a context where a formerly free variable such as the last occurrence of x_1 in (36-a) would become bound as the result of that operation.

Let us illustrate the problem with a lingustic example. Assume that P stands for *man*, and R for *loves*. Let I be the function that assigns an interpretation to these predicates in a model. Adopting the notation of (35-b), *every man*$_1$ *loves him*$_2$ would be represented as something like (37), where $g'[a/n]g$ is true if and only if g' (possibly) differs from g by assigning the individual a to the variable x_n:

(37) $(\forall a \in D)(\forall g' \in G)(g'[a/1]g \rightarrow (I_P(g'(1)) \rightarrow I_R(g'(1), g'(2))))$

This is the usual way of stating the truth conditions in the meta language. But next consider a slight modification of (37).

(38) $(\forall a \in D)(\forall g' \in G)(g'[a/1]g \rightarrow (I_P(g'(1)) \rightarrow I_R(g'(1), X_2(g'))))$

In (38) we replaced the translation of the pronoun *him*$_2$ by a complex variable that ranges over assignments. Now assume that X_2 is in fact the semantic interpretation of a syntactic trace. This variable applies to the assignment function g' used at the current stage of semantic evaluation. The next step is lambda abstraction over that variable as shown in (39-a), which semantically represents (39-b):

(39) a. $\lambda X_2(\forall a \in D)(\forall g' \in G)(g'[a/1]g \rightarrow (I_P(g'(1)) \rightarrow$
$I_R(g'(1), X_2(g'))))$
b. λX_2 every man$_1$ loves t_{X_2}

Let us now apply (39) to the aforementioned more complex translation of a bound variable pronoun. That is, we actually want to represent the sentence in (40):

(40) Himself$_1$, every man$_1$ loves t

Since *himself* must be interpreted as bound by *every man*, its meaning must be as shown in (41):

(41) himself$_1$ = $\lambda g.g(1)$

By combining (41) and (39-a), we get (42):

(42) $\lambda X_2(\forall a \in D)(\forall g' \in G)(g'[a/1]g \rightarrow (I_P(g'(1)) \rightarrow$
$I_R(g'(1), X_2(g'))))(\lambda g.g(1))$

But observe now that lambda conversion (of X_2) has become unproblematic, since

the converted material no longer contains any free variables. The result of lambda conversion applied to X_2 is shown in (43-a). Applying conversion again to g' yields (43-b). In traditional object language notation this is equivalent to (43-c):

(43) a. $\forall a \in D)(\forall g' \in G)(g'[a/1]g \rightarrow (I_P(g'(1)) \rightarrow I_R(g'(1), \lambda g.g(1)(g'))))$

b. $\forall a \in D)(\forall g' \in G)(g'[a/1]g \rightarrow (I_P(g'(1)) \rightarrow I_R(g'(1), g'(1))))$

c. $\forall x(P(x) \rightarrow R(x, x))$

This demonstrates that lambda conversion can bring a syntactically free pronoun into the scope of its semantic binder, but only if the semantic value of a semantically bound pronoun is not the same as that of ordinary variables. Rather it must be the meaning of a variable in the meta-language, where assignments (or simply: sequences of individuals) are part of the language we talk about.

Of course it remains to be shown that all this can be done in a systematic way. But this is exactly what Bennett has shown in his paper, where all translations of natural language expressions into a typed predicate logic are of the general form $\lambda g.\alpha$. Accordingly, if an expression is to be interpreted as dependent on a quantifier, its value depends on an assignment, as the bound variable pronoun in (41). By contrast, a referential pronoun would have to be translated as $\lambda g.x_1$.

A systematic exposition of the semantics can be found in Sternefeld (1997), where I also have shown how such a theory can apply to semantic reconstruction in cleft constructions as discussed above. For reasons of space this analysis cannot be repeated here; instead I will briefly indicate how Barss' theory can be accommodated in the light of recent developments.

7 An *in situ* Theory of Syntactic Binding

In this section I intend to reformulate Barss' theory. The aim is to account for the above mentioned data and to integrate into the theory two further features that are absent from Barss 1986 theory: First, we want to get a mono-representational reformulation of Lebeaux's basic intuition that adjuncts can be inserted on the way to S-structure, and that anaphors can be checked at any point of the derivation. Second, we want to integrate Heycock's finding that condition (C) effects at LF occur if and only if there is semantic reconstruction.

The basic intuition to begin with is to redefine Barss' accessibility paths as a subtree and an ordering of nodes in that tree. That is, an ordered "Binding Tree" is roughly equivalent to a Barssian accessibility path. A condition (C) effect is encountered if and only if an R-expression γ has a Binding Tree that leads to a coindexed binder, i.e. there is a node α in the Binding Tree such that some β is a sister of α and β is coindexed with γ. Condition (A) can be satisfied by finding a *subtree* of the Binding Tree of the anaphor which leads to a coindexed antecedent.

Accordingly, the main idea is this: the requirement that condition (C) be satisfied

at all levels is fulfilled by considering the entire Binding Tree. The requirement that condition (A) must be satisfied at some arbitrary stage of the derivation can be satisfied by looking at only a partial Binding Tree.

Let us now define these concepts rigorously (for further details, see also the discussion in Sternefeld (1997)):

(44) **Binding Tree:**
Given a tree Σ and a node $\alpha \in \Sigma$, the Binding Tree for α is the smallest subtree $T \subseteq \Sigma$ that satisfies the following conditions:

a. $\alpha \in T$,
b. the root of T is the root of Σ,
c. if $\beta \in T$ and γ is the local trace of β, then $\gamma \in T$, **unless**
   (i) α is an R-expression,
   (ii) β (reflexively) dominates an adjunct that dominates α, and
   (iii) γ is not a reconstruction site,

The **unless**-clause is a representational version of Lebeaux (1994). It implies that:

a. A trace is always an element of the tree if it is a reconstruction site. This was established by Heycock and the examples in Section 2. A trace is a reconstruction site if and only if it is translated as a variable of the same type as the antecedent (cf. Sternefeld (1997) for details). This means that we actually look at Binding Trees at LF, but for the phenomena to be considered here it is crucial that LF and surface structure coincide.

b. A trace is always an element of the tree in case α is an anaphor. This ensures that principle (A) is in principle independent of reconstruction. That is, we get anaphoric dependency even in examples like "Which pictures of himself$_1$ did he$_{1/2}$ claim he$_{2/1}$ had no kwoledge of", where there is no semantic reconstruction involved.

c. A trace may escape from being an element of a Binding Tree for α if it is not a reconstruction site *and* its antecedent (reflexively) dominates an adjunct that dominates the R-expression α. This is basically Lebeaux's observation that R-expressions within adjuncts are not visible at D-structure, i.e. the trace of such an adjunct is not in the Binding Tree, unless it is a reconstruction site.

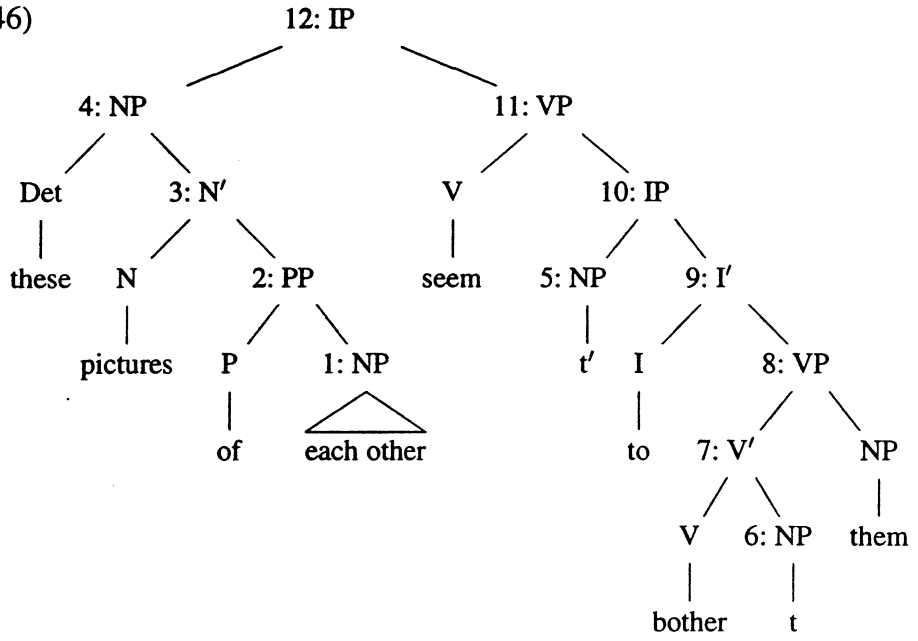
In order to explain the locality of anaphoric binding, it remains to establish an ordering on the trees. This is done in (45):

(45) **Ordered Binding Tree**:
An ordering $<$ of the nodes of a Binding Tree is BT-compatible iff it is a strict and total ordering that satisfies the following conditions:

a. if α dominates β, then $\beta < \alpha$, and
b. if α precedes β in a reconstruction chain, then $\alpha < \beta$.

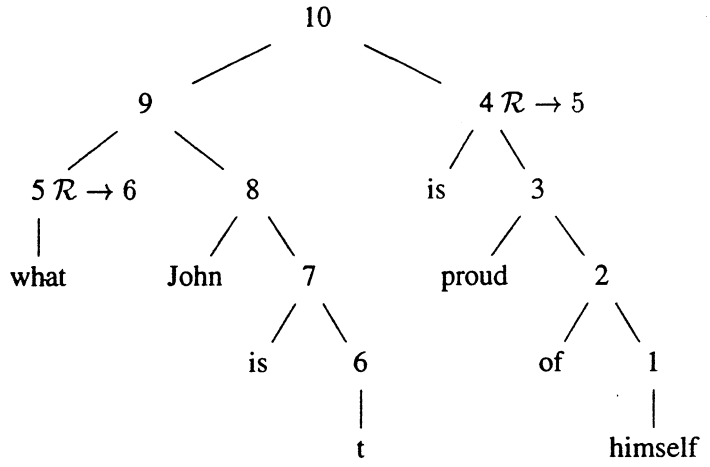
The ordering of a (reconstruction) chain is determined by c-command. For example, one can order the following tree as indicated by consecutive numbers (the structural analysis is taken from (Barss, 1986, p. 116)):

(46)



The closest possible binder on the path of *each other* is the sister of node 7, and indeed this gives us the correct result. Another example involving clefts is the following:

(47)



Here $\mathcal{R}$ is the semantic operation of reconstruction. This basically works like lambda abstraction, with the number following the arrow as the node that translates as the variable that becomes bound by the lambda operator. It is obvious that the anaphor can be bound here only by following its binding path. We thus formulate the conditions (C) and (A) of the Binding Theory as follows:

(48) **Binding Theory:**

a. An R-expression is A-free with respect to its Binding Tree.

b. If α is an anaphor, α is locally A-bound with respect to a subtree of its Binding Tree that satisfies the following conditions:

(i) it contains α,

(ii) its nodes are BT-compatible, i.e. they can be ordered according to (45), and

(iii) it is functionally complete.

To illustrate, consider (6-a) again, here repeated as (49):

(49) [What$_i$ *John* wants [*Mary* to paint t$_i$]] are pictures of himself/herself

It is clear from the above that the Binding Path of *himself* extends from right to left up to the copula, then reconstructs into *what*, then to the trace t$_i$, and finally up to the root. If this were the only BT-compatible tree, then — according to any BT-compatible ordering — the most local binder would be *Mary*, making the wrong prediction. But now observe that (48) crucially requires only a BT-compatible subtree of the Binding Tree. We therefore need not go down from *what* to the trace but could stop somewhere in between, for example at *want*. This clearly gives the correct result, since from this position *Mary* is no longer accessible, so that the closest possible binder is *John*. And this is precisely the result we were after.

8 Conclusion

In general, it seems fairly easy to show that a representational theory can express everything a derivational theory can (cf. also Sternefeld (1991) or Sternefeld (1996)), whereas it is extremely difficult to show that either theory is superior to the other at the level of explanatory adequacy. The above arguments illustrate this claim in a straightforward way: On the one hand, I think it is fairly straightforward to show that a representational *in situ* semantics is feasible. On the other hand, I found it rather difficult to find infallible and water-tight arguments in favor of or against such a method.

As always in linguistics, arguments are theory dependent. For example, assume we adopt the Minimalist Program. Recall that Chomsky (1995) acknowledges only two interfaces (PF and LF) and claims that conditions are either purely derivational or interface conditions. But now recall that (a) for a number of conditions, surface structure rather than a reconstructed structure is relevant, and (b) these conditions are structural conditions on scope, hence unlikely to operate at PF. But given that the Minimalist Program does not allow any conditions on surface structure, these conditions must hold at LF. Given these premises, a contradiction can only be avoided if and only if surface structure is essentially identical to LF. But this is exactly Higgins' Null Hypothesis.

It would therefore be wrong to conclude that since both NPI locality conditions for *any* and binding conditions involve reconstruction, syntactic reconstruction could

yield a unified explanation but semantic reconstruction cannot. For one thing, the locality conditions are still different, but more importantly, they are still syntactic. Being different, there is no a priori reason to assume that there be a uniform level to which they apply. Being syntactic, they can both be spelled out either with respect to another level or with respect to Binding Trees, so reconstruction does not by itself supply an extra degree of uniformity. Finally, the purported argument abstracts away from the cases discussed above where NPIs like *until* do not behave in the predicted uniform way. Some distinctions must be drawn, but there seems to be no explanatory argument to the effect that this could not be achieved at a single level, or that the multiplication of levels would automatically provide an adequate solution.

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Clefts in Scandinavian
An Investigation

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0. Introduction

Scandinavian languages make extensive use of a cleft construction that is structurally very similar to the one familiar from English. A Norwegian reference grammar (Faarlund et al. 1997:1090-1) cites, among others, the examples in (1) by way of illustration.[1]

(1) a. Det er berre seg sjølv han vil snakke om. (Nor)
it is only RFX self he will talk about
'It is only himself he wants to talk about'

b. Er det på denne måten du vil vi skal bli venner igjen?
is it on that way you will we shall become friends again
'Is it in that way you want us to become friends again?'

c. Det er ondskapsfull han er.
it is malicious he is
'What he is is malicious'

d. Det er liggje i telt eg ikkje vil
it is lie in tent I not will
'What I don't want to do is lie in a tent'

e. Meg var det Staten som investerte i.
me was it the.state as invested in
'As for me, it was the state that invested in me'

There must be a gap in the embedded clause, though it may be deeply embedded, as shown in (1b), and the embedded clause may be further extracted from, as in (1e). (On the glossing of *som* as 'as,' see §1 below.) The only exception to the requirement for a gap (barring resumptive pronouns) is when the element following the copula includes the main verb of the embedded clause, in which case the verb *gjere* 'do' may be inserted, as in (2a) (cf. (1d)). If there is no auxiliary, then insertion of the appropriate form of *gjere* is obligatory, as shown in (2b-c). The verb following the copula may appear in its interpreted tense or in the infinitive, as indicated in (2b).

(2). a. Det er liggje i telt eg ikkje vil gjere. (Nor)
it is lie in tent I not will do
(same as (1d))

b. Det var stele/stal han gjorde.
it was steal/stole he did
'What he did was steal'

c. * Det var stele/stal han.
it was steal/stole he

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[1] Norwegian examples are cited in whatever written standard they originally appear in. Those not cited from published works are in the Nynorsk written standard except where indicated otherwise. I gloss the third person reflexive element *seg/sig* as RFX.

The expletive and a copular element are necessary for the cleft construction, though the expletive may be separated from the copular element by a raising verb, as in (3a-b), and the copular element need not be the verb *vere* 'be,' as shown in (3c).

(3) a. Det synes å vere seg sjølv han vil snakke om. (Nor)
it seems to be RFX self he will talk about
'It seems to be himself he wants to talk about'

b. Ho fekk det til å sjå ut til å vere han som tok siste kakestykket
she got it to to look out to to be him as took last the.cake.piece
'She made it appear to be him that took the last piece of cake'

c. Det blir nok eg som får svi.
it becomes surely I as gets sting
'I suppose it will be me that suffers'

In each of the cases shown thus far, the element following the copula (following the subject, in the inverted (1b, e)) is in focus. I will refer to this element as the 'focus,' without meaning to imply that there is any well-defined notion of informational focus consistently associated with the position. For example, the construction is often used with the subject in 'focus' in cases where the subject is not set up against a focus set in Rooth's 1985 sense, but where it is new information, as in the dialogue in (4), from Faarlund 1992:142.

(4) a. Korfor er det så kalt her? (Nor)
why is it so cold here
'Why is it so cold here?'

b. Det er Ola som har opna glaset.
it is Ola as has opened the.window
'Ola has opened the window'

This use is common in spoken language, presumably because there is a constraint against new information in the initial position in a sentence (cf. Faarlund 1992, Svenonius forthcoming). The language of newspapers provides examples where the focus (as I will continue to call it) is not even new information; Venås 1978 records the following example:

(5) Det var like før U Thant skulle begraves forrige torsdag (Nor)
it was just before U Thant should be.buried previous Thursday

at studenter stormet bygningen og tok båren
that students stormed the.building and took the.bier
'Just as U. Thant was about to be buried last Thursday, students stormed the building and siezed the bier'

Here, it seems, the temporal expression is a sort of lead-in, and the potentially new information actually comes in the subordinate clause following the so-called focus (cf. Faarlund et al. 1997:1093 for additional examples and discussion).

In spoken language, clefts are also extremely common in questions, more so than in English. Some examples appear in (6) (cf. Faarlund 1992: 140-1, Faarlund et al. 1997:1091-2).

(6) a. Er det slik du trur eg vil ha det? (Nor)
is it thus you think I will have it
'Is that how you think I want it?'

b. Kvar er det du bur?
where is it you live
'Where is it you live?'

Here my examples have been restricted to Norwegian, but similar facts hold for the other Scandinavian languages. In this paper I examine the structural facts for the construction in four Scandinavian languages, Icelandic, Swedish, Norwegian, and Danish (mention of Faroese is unfortunately limited to this sentence). I do not discuss the informational or semantic characteristics of the construction in any detail, but focus on the syntax.

This is a working paper; the primary goal has thus far been to make sense of the data, and to present it in a coherent fashion. The analysis at this stage is to a certain extent a descriptive restatement of the facts. I suggest specifically that some clefts are derived by movement of the focus out of the embedded clause, while in others, the focus is base-generated and there is only operator movement in the embedded clause. On my analysis, Swedish only has the movement type, while the other languages make use of both types. The differences are located primarily in the inventory of complementizers, and secondarily in the inventory of operators.

The structure of the paper is as follows. In §1 I lay out the basic facts for relative clauses for the four languages, since relative clause structure is obviously relevant to the study of cleft constructions. The data for clefts is presented in §2. In §3 I quickly summarize some background assumptions I am making about predication, and in §4 I briefly discuss some previous analyses of relative clauses and clefts. In §5 I argue that there are two different types of it-clefts, using English for illustration, and in §6 it is shown how the Scandinavian data matches this pattern..

1. Relative Clauses

In this section I describe the basic facts for relative clauses, concentrating on the distribution of the relative elements ('relative pronouns' or 'relative particles,' as they are known in traditional grammar). I begin with a drive-by look at Old Norse to put the modern patterns into perspective. I will not in this paper provide any discussion or analysis of Old Norse cleft constructions.

1.1. Relative Clauses in Old Norse

Old Norse had several invariant (noninflecting) particles, including *er*, *en*, and *sem*, and occasionally *að* or *at*, which could introduce relative clauses (cf. Nygaard 1906:256.265, whence the examples in (7) and (8a); Faarlund 1994 for a recent summary in English; recent analyses include Christensen 1995 and Åfarli 1995). Some representative examples are shown in (7).

(7) a. Hann tók hest er Gunnarr átti (ON)
he took horse REL Gunnar owned
'He took a horse that Gunnar owned'

b. eptir því sem Eyvindr segir
after that as Eyvind says
'according to what Eyvind says'

There are also some types in which the element introducing the RC is a pronoun, matching either the modified DP or the gap in case, as in (8a). Another possibility, used only in what Nygaard 1906 calls 'learned style' (which he suggests is affected by Latin and other foreign influences), is to have a wh-expression introducing the relative clause, as seen in (8b), from Heggstad et al. 1975:361.

(8) a. Þá kómu hlaupandi dýr mörg þau skorpiones heita (ON)
then came running animals many those scorpions are.called
'Then came running many animals which are called scorpions'

b. ...bréf, í hverju sem hann gaf...
letter in which as he gave
'a letter in which he gave...'

In learned style, pied piping is possible with wh-expressions (as in (8b)) and with pronouns, suggesting that they are phrasal. Such pronouns and wh-elements frequently cooccur with a relative particle (*sem* in (8b)). These facts suggest that the particles were complementizers, while the pronominal element occupied SpecCP, like English *which* (on the standard analysis; cf. §4 below); this is the analysis proposed in Åfarli 1995.

1.2. RELATIVE CLAUSES IN MODERN SCANDINAVIAN

In modern Scandinavian, the forms which have become predominant are those with *som/sem* and those with no relative element at all, in Mainland Scandinavian (MS). This is sketched in (9): *sem* is obligatory in Icelandic, but *som* is optional in MS.

(9) a. strákurinn *(sem) ég þekki (Ice)
b. pojken (som) jag känner (Swe)
c. guten (som) eg kjenner (Nor)
d. drengen (som) jeg kender (Dan)
the.boy as I know

As with English, a subject gap requires an overt relative element in all of the Scandinavian languages.

(10) a. strákurinn *(sem) þekkir mig (Ice)
b. pojken *(som) känner mej (Swe)
c. guten *(som) kjenner meg (Nor)
d. drengen *(som) kender mig (Dan)
the.boy as knows me

Danish has an additional possibility, not realized in the other languages: the locative pronoun *der* 'there' can also appear introducing a relative clause, only if the gap is a subject gap, as shown in (11a-b). The same word is used in expletive constructions, as in (11c), and appears in subordinate wh-questions with subject gaps, as in (11d).

(11) a. drengen der kender mig (Dan)
the.boy there knows me
b. * drengen der jeg kender
the.boy there I know
c. Der kom en dreng.
there came a boy
'A boy arrived'
d. Hun vidste ikke, hvem der havde gjort det.
she knew not who there had done it
'She didn't know who had done it'

The other languages have *der* (*där*, *þar*) only as a relative pronoun and in certain locative expressions; though it can have a relative clause attached to it (as can most pronouns, in Scandinavian; cf. §1.3 below), as shown in (12a), it cannot head a relative, as indicated in (12b).

(12) a. Vi fann boka der (som) du hadde gløymd den. (Nor)
we found the.book there as you had forgotten it
'We found the book where you had left it'
b. * guten der kjenner meg
the.boy there knows me

In the Scandinavian languages other than Danish, *der* (and its cognates) does not appear as an expletive. Compare (11c) with (13).

(13) a. Der kom ein gut. (Nor)
there came a boy
'There, a boy came'
b. Det kom ein gut.
it came a boy
'A boy arrived'

Nor can *der* appear in an embedded question. Compare (11d) to (14).

(14) a. * Ho visste ikkje, kven der hadde gjort det. (Nor)
she knew not who there had done it
b. Ho visste ikkje, kven som hadde gjort det.
she knew not who as had done it
'She didn't know who had done it'

In some varieties of Danish, *som* and *der* can cooccur, as in (15a), from Vikner 1991:115), and may even appear together with the finite complementizer *at* as in (15b) (op. cit. p. 112).

(15) a. de lingvister som der vil læse denne bog (Colloquial Dan)
the linguists as there will read this book
'the linguists who want to read this book'
b. ? de lingvister som at der vil læse denne bog
the linguists as that there will read this book
(same meaning)

I repeat Vikner's judgments. However, see below, where I discuss this phenomena with respect to clefts and explain the label 'Colloquial Dan[ish].' *At* also turns up, at least marginally, in relative clauses without subject gaps, as in (16b), also from Vikner (op. cit. p. 113). The same type is also possible, and also non-standard, in Icelandic, as shown in (16a).[2]

(16) a. bók sem að þessi málfræðingur vill lesa (Colloquial Ice)
b. ? en bog som at denne lingvist vil læse (Colloquial Dan)
a book as that this linguist will read
'a book that this linguist wants to read'

Otherwise, the finite complementizer *at/að* does not appear in relative clauses, in contrast to its counterpart *that* in English (though there are examples from Old Norse, cf. Åfarli 1995; also, Vikner 1991:129 cites dialectal Danish examples, from a paper by Lars Heltoft, in which *at* is the only complementizer).

Thus, *som/sem* is clearly the dominant relative element in modern Scandinavian, with a null option except in Icelandic; the subject oriented element *der* is important in Danish. Other relative elements are rarely used. Wh-elements play a limited role in relative clauses in Scandinavian; they appear to some extent in formal styles, and in possessive constructions as in (17). ((17c) is regarded by many Norwegian speakers as formal, and possessive *hvis* is not used in Nynorsk; the sentence is given in Bokmål.)

(17) a. *? maðurinn hvers konu ég hitti (Ice)
b. mannen vars fru jag träffade (Swe)
c. mannen hvis kone jeg traff (Nor)
d. manden hvis kone jeg traf (Dan)
the.man whose wife I met

Wh-expressions play no role in clefts in Scandinavian, so I will ignore them in what follows.

1.3. RELATIVE CLAUSES WITH PRONOUNS

As mentioned above, relative clauses in Scandinavian appear fairly freely with pronouns, as indicated by the Norwegian examples in (18) (cf. also (7b) above for Old Norse).

(18) a. Han som sølte ølet sit der enno. (Nor)
he as spilled the.beer sits there still
'The guy who spilled the beer is still sitting there'

[2] It is difficult to know how to interpret the reduced acceptability of such forms, given that speakers are aware that they are prescriptively 'wrong,' but I have marked (16b) with '?' to indicate the contrast with (15a), as does Vikner, and have left (16a) without any mark, to indicate the contrast with a later example in §2.6. below. On the whole the two Icelandic informants who volunteered the construction were happier with it than my two West Jutlandic informants.

b. Ho eg ville ha var utsolgt.
that I would have was sold.out
'The one I wanted was sold out'

c. Dei som han åt var fisken og piggsvinet.
those as he ate were the.fish and the.hedgehog
'The ones that he ate were the fish and the hedgehog'

d. Det som han åt var krydra.
that/it as he ate was spiced
'The one that he ate was spicy'
or 'What he ate was spicy'

The pronouns in (18a-c) are referentially specific and gender specific; for example, in (18b), *ho* can only be used if there is a salient set of things which are referred to by a feminine noun, for example, books (*bok*, feminine). Similarly, in (18c) a set must be salient, for example a set of animals. The relative clauses that appear with these elements are unexceptional; *som* is obligatory with a subject gap, but optional with other gaps (cf. (18b) vs. (18c-d)). *Det* can also have this specific meaning, as in the first translation for (18d), where the salient set might be of animals (*dyr*, neuter), but it can also be non-specific; hence the second translation for (18d). This use of *det* instantiates the specificational-predicational ambiguity of the English translation (discussed in Akmajian 1970b, Higgins 1973), which comes out more clearly in examples like those in (19).

(19) a. Det Kjersti er er stolt over {seg sjølv/*henne} (Nor)
it Kjersti is is proud over RFX self / her
'What Kjersti is is proud of herself' (specificational)

b. Det Kjersti er er viktig for {henne/*seg sjølv}
it Kjersti is is important for her / RFX self
'What Kjersti is is important to her' (predicational)

Det can only refer to non-humans, ordinarily; thus (20a) is infelicitous, because only humans normally pay for anything, while (20b) is odd out of context but would be possible in a situation where we weren't sure initially that it was a human we were looking at.

(20) a. * Det som betalte var Håvard. (Nor)
that/it as paid was Håvard

b. Det som vi såg var Håvard.
it as we saw was Håvard
'What we saw was Håvard'

Common in many dialects are forms with *den* (the masculine and feminine article/demonstrative/pronoun) as in (21), but this form is prescribed against in the Nynorsk written standard, so the examples are in Bokmål; in Bokmål (as in many dialects), *han* and *ho* are restricted to human referents, so (18b) above would be impossible, referring to a book, and (21b) would be used instead.

(21) a. Den som betalte var Håvard (Nor)
that was paid was Håvard
'The one that paid was Håvard'

b. Den jeg ville ha var utsolgt.
that I would have was sold.out
'The one I wanted was sold out'

These structures are of obvious interest for an analysis of clefts, since they closely resemble cleft structures. For example, the cleft in (22a) could be derived from the (specificational) relative clause structure in (19a), and (22b) could come from (20b), by relative clause extraposition, as in various analyses of English clefts (e.g. Akmajian 1970a, b; cf. also Thráinsson 1979 for Icelandic).

(22) a. Det er stolt over seg sjølv Kjersti er. (Nor)
it is proud over RFX self Kjersti is
'What Kjersti is is proud of herself'

b. Det var Håvard som vi såg
it was Håvard as we saw
'It was Håvard that we saw'

However, relative clause extraposition in Scandinavian is highly constrained, and such an analysis would have to explain why extraposition is blocked whenever the pronoun is not *det*, as in (23a-b) (from (18a) and (21a)), and whenever the predicate is not specificational, as in (23a, c) (from (18a, d)); (23d) lacks the predicational reading that is natural for (19b), and the pronoun cannot be read as coreferent.

(23) a. * Han sit der enno som sølte ølet
he sits there still as spilled the.beer

b. * Den var Håvard som betalte.
that was Håvard as paid

c. * Det var krydra som han åt.
it was spiced as he ate

d. Det er viktig for henne Kjersti er.
it is important for her Kjersti is
'What Kjersti$_i$ is is important to her$_j$' (specificational only)

There are clefts with non-specificational foci, as seen in (1-6) above, but these do not have relative clause sources, as seen in (24); (24a) is based on (5), and (24c) is repeated from (1d).

(24) a. Det var like før gravferda at studentane tok båra. (Nor)
it was just before the.funeral that the.students took the.bier

b. * Det at studentane tok båra var like før gravferda.
it that the.students took the.bier was just before the.funeral

c. Det er liggje i telt eg ikkje vil
it is lie in tent I not will

d. * Det eg ikkje vil er liggje i telt.
it I not will is lie in tent

Thus, even if an extraposition analysis were to be adopted for some clefts, another source would have to be available. In §5 below I will motivate two different sources for cleft constructions, one of which is similar in many ways to the extraposition analysis, but does not involve literal extraposition from subject position.

1.4. SUMMARY

To summarize the facts for relative clauses in general, they are usually introduced by *som* (Icelandic *sem*) or by nothing, though this latter option is only available in MS and only possible when the gap is not a subject gap. Prepositions are regularly stranded, and nothing may pied-pipe along with *som*. *Som* does not inflect, and shows no other form of morphological variation.

I have not mentioned non-restrictive relative clauses. They, too, are introduced by *som* (obligatorily), and are otherwise generally similar to their English counterparts, being possible with names and clauses as well as with ordinary DPs, and being set off intonationally. They are discussed briefly in §5.1, but not with respect to any specifically Scandinavian facts. See Platzack 1997 for discussion and analysis.

2. Clefts

In this section I discuss the pattern for cleft constructions in the four languages, focusing in particular on the distribution of the introducing element (e.g. *som*). As noted in the introduction, I refer to the element after the copula as the 'focus.'

2.1. DP FOCUS

In the examples in (25) it can be seen that the pattern is like that demonstrated above for relative clauses: *sem* appears, obligatorily, in Icelandic, and *som*, optionally, in MS. This is the case generally when the focus is a DP.

(25) a. Það var Jón sem ég hitti í bænum (Ice)
b. Det var Jon (som) jag träffade i staden (Swe)
c. Det var Jon (som) eg traff i byen (Nor)
d. Det var Jon (som) jeg traf i byen (Dan)
it was Jon as I met in town

When the gap is in subject position, *som* becomes obligatory, as with relative clauses.

(26) a. Það var Jón sem hitti mig í bænum (Ice)
b. Det var Jon som träffade mej i staden (Swe)
c. Det var Jon som traff meg i byen (Nor)
d. Det var Jon som traf mig i byen (Dan)
it was Jon as met me in town

As with relative clauses (cf. (11a) in §1), Danish allows *der* when the gap is a subject gap, but not otherwise (cf. (11b)).

(27) a. Det var Jon der traf mig i byen (Dan)
it was Jon there met me in town
b. * Det var Jon der jeg traf i byen
it was Jon there I met in town

For most speakers of MS, the case on the focus must match the case of the gap (some speakers allow a default objective case). This is also possible in Icelandic, but the focus can also appear in nominative case in Icelandic, as discussed in Thráinsson 1979. When this option is employed, the copula agrees with the focus (cf. (28a) below with (25a) above)).

(28) a. Það voru þeir sem ég hitti í bænum (Ice)
b. * Det var de (som) jag träffade i staden (Swe)
c. * Det var dei (som) eg traff i byen (Nor)
d. * Det var de (som) jeg traf i byen (Dan)
it were they as I met in town
'It was them that I met in town'

A pronoun is used as the focus in this example because only pronouns show case distinctions in MS, but the same fact can be demonstrated in Icelandic with full DPs.

(29) a. Það var hestinum sem hann datt af. (Ice)
it was the.horse.DAT as he fell off
'It was the horse that he fell off'
b. Það var hesturinn sem hann datt af.
it was the.horse.NOM as he fell off
(same meaning)

In (29a), *hestinum* 'the horse' shows the dative case appropriate for a complement of the preposition *af*. In (29b), however, it shows nominative case, which is ordinarily impossible for the complement of *af*. See Thráinsson 1979:80-82 for examples and discussion. I will return to the significance of these facts below in §6.3.

2.2. PP FOCUS

Additional differences among the various languages appear when the focus is a prepositional phrase. Icelandic and Swedish form clefts with PP foci and *sem/som*, but Norwegian and Danish do not.

(30) a. Það var í bænum sem ég hitti Jón (Ice)
b. Det var i staden som jag träffade Jon (Swe)
c. * Det var i byen som eg traff Jon (Nor)
d. * Det var i byen som jeg traf Jon (Dan)
it was in town as I met Jon

In Norwegian and Danish, the complementizer *at* appears in clefts with PP foci. This is shown in (31) (cf. also (5) above). *At* is the usual finite complementizer for embedded declarative clauses, e.g. under such verbs as 'believe' As indicated, the corresponding complementizer *að* is also possible in Icelandic, with PP foci, but this option is not available in Swedish.[3]

(31) a. Það var í bænum að ég hitti Jón (Ice)
b. * Det var i staden att jag träffade Jon (Swe)
c. Det var i byen at eg traff Jon (Nor)
d. Det var i byen at jeg traf Jon (Dan)
it was in town that I met Jon

This pattern represents a striking contrast with the pattern for relative clauses, where this complementizer is not an option (except in certain cases in varieties of Danish, generally in conjunction with other relative elements; cf. (15b-c) in §1.2).

In the examples of relative clauses in §1.2, the distribution of *som* versus the absence of any relative complementizer was consistent with a deletion rule for *som* by which *som* could be deleted (in MS) when it does not immediately precede a subject gap (as in Taraldsen 1978); the contexts in which a relative complementizer could fail to appear was a subset of the contexts in which *som* could appear. This is, however, not the case for MS clefts. Although *som* is not possible in Danish and Norwegian with PP foci, the null option is. This is indicated in (32).

(32) a. * Það var í bænum ég hitti Jón (Ice)
b. Det var i staden jag träffade Jon (Swe)
c. Det var i byen eg traff Jon (Nor)
d. Det var i byen jeg traf Jon (Dan)
it was in town I met Jon

The pattern here is interesting because it shows that the null complementizer (assuming that there is a CP dominating the clause 'I met John') has a wider distribution in Norwegian and Danish than the complementizer *som*. Now, it might be assumed that in addition to a deletion rule affecting *som*, there is a deletion rule affecting *at*. This would mean that (32c-d) could be derived from (31c-d). However, there are further examples, discussed immediately below, which indicate that the null complementizer does in fact have a wider distribution than both *som* and *at*.

2.3. AP FOCUS

Consider the examples in (33), where the focus is a resultative AP (predicative APs in general pattern the same way; cf. (1c) above).

(33) a. * Það var rautt hann málaði húsið (Ice)
b. Det var rött han målade huset (Swe)
c. Det var raudt han måla huset (Nor)
d. Det var rødt han malede huset (Dan)
it was red he painted the.house

Consistently with the patterns elsewhere, Icelandic disallows the example without a complementizer. MS speakers, on the other hand, accept such examples, at least in an

[3] All four Icelandic speakers consulted preferred *sem* to *að* in such sentences, and one regarded sentences like (31a) as marginal.

appropriate context and with contrastive stress on the focused element. However, here *at* (*att*, *að*) is uniformly impossible, and even *som* is degraded in Icelandic, Norwegian, and Danish.

(34) a. ? Það var rautt sem hann málaði húsið (Ice)
b. Det var rött som han målade huset (Swe)
c. ? Det var raudt som han måla huset (Nor)
d. ? Det var rødt som han malede huset (Dan)
it was red as he painted the.house

As a result, there is no fully grammatical example of a cleft with a focused resultative AP in Icelandic,[4] and Danish and Norwegian prefer the null complementizer to *som*. The same is true for certain other classes of elements, for example VPs (cf. (1d) and (2) above). This means that an optional deletion rule for *som* (or one for *at* as well as *som*) cannot capture the distribution of the null complementizer.

This can also be demonstrated using depictive APs, which provide a different pattern of acceptability. With no complementizer, clefts with a depictive AP focus pattern basically with resultative APs, though they are slightly deviant, at least in Norwegian and Danish (Faarlund et al. 1997:1091 mark similar examples with a question mark; I have indicated their less-than-optimal status here with a question mark in parentheses but will henceforth treat them as acceptable, as the contrast with (37c-d) below was palpable for all informants).

(35) a. * Það er nakinn hann þvær gólfið (Ice)
b. Det er naken han tvättar golvet (Swe)
c. (?) Det er naken han vasker golvet (Nor)
d. (?) Det er nøgen han vasker gulvet (Dan)
it is naked he washes the.floor

With *som*, however, the judgments are quite different from those with resultatives. Only Swedish allows *som* here.

(36) a. *? Það er nakinn sem hann þvær gólfið (Ice)
b. Det er naken som han tvättar golvet (Swe)
c. * Det er naken som han vasker golvet (Nor)
d. * Det er nøgen som han vasker gulvet (Dan)
it is naked as he washes the.floor

Depictives, in fact, pattern more closely with PPs like 'in town,' shown in (30-32) above, in that the complementizer *at* is preferred to *som* in Norwegian and Danish (though not in Icelandic). However, even with *at* the clefts are marginal.

(37) a. * Það er nakinn að hann þvær gólfið (Ice)
b. * Det er naken att han tvättar golvet (Swe)
c. ? Det er naken at han vasker golvet (Nor)
d. ? Det er nøgen at han vasker gulvet (Dan)
it is naked that he washes the.floor

Thus, again, the null complementizer in Norwegian and Danish has a wider distribution than any overt complementizer.

2.4. The Features Relevant

It is not clear to me as of yet exactly what the characterization of the different classes of focus elements should be. The correct characterization will almost certainly be semantically explicit. However, the superficial pattern is split along lexical category lines, at a first approximation. DPs quite generally take *som* or null, except in Icelandic or when the gap is a subject gap, in which case they quite generally take *som* (*sem*). PPs fairly generally allow *at* or its cognates, except in Swedish; they allow a null complementizer in MS but not in Icelandic. APs are acceptable in MS with no complementizer, but not acceptable in Icelandic

[4] Though Thráinsson 1979:77 gives examples with resultative and predicative APs without marking them as degraded.

and not fully acceptable with any overt complementizer in MS except in Swedish, where the complementizer must be *som*. The difference between resultative and depictive APs is that resultative APs are marginally acceptable with *som* in Norwegian and Danish and *sem* in Icelandic, in other words they are marginally like DPs, while depictive APs are marginally acceptable with *at* in Norwegian and Danish, in other words they are marginally like PPs.

To see how lexical category seems to be a relatively accurate way to organize these categories, compare a subject-controlled expression like 'without clothes' in (38), which is semantically similar to the depictive AP 'naked' in (35-37), but has the category PP, like 'in town' from (30-32). More or less as in (35), and exactly as in (32), it is acceptable in MS in a cleft construction with no complementizer, as shown in (38).

(38)	a. *	Það er án	klæða hann þvær gólfið	(Ice)
	b.	Det er utan	kläder han tvättar golvet	(Swe)
	c.	Det er utan	klede han vasker golvet	(Nor)
	d.	Det er uden	klæder han vasker gulvet	(Dan)
		it	*is without clothes he washes the.floor*	

It is also fully acceptable with *at* in Norwegian and Swedish, and with *að* in Icelandic, like the PP in (31), but less like the depictive in (37).[5]

(39)	a.	Það er án	klæða að hann þvær gólfið	(Ice)
	b. *	Det er utan	kläder att han tvättar golvet	(Swe)
	c.	Det er utan	klede at han vasker golvet	(Nor)
	d.	Det er uden	klæder at han vasker gulvet	(Dan)
		it	*is without clothes that he washes the.floor*	

Finally, with respect to *som/sem*, the PP here is acceptable in Icelandic, as was the case with the PP in (30), in contrast to the example with a depictive in (36).

(40)	a.	Það er án	klæða sem hann þvær gólfið	(Ice)
	b.	Det er utan	kläder som han tvättar golvet	(Swe)
	c. *	Det er utan	klede som han vasker golvet	(Nor)
	d. *	Det er uden	klæder som han vasker gulvet	(Dan)
		it	*is without clothes as he washes the.floor*	

In such cases it seems that generalizing over lexical category leads to a good approximation of the facts, though a close examination of the data shows that it is not ultimately adequate. For example, there are subtle differences in acceptability depending on the type of PP in focus. In (30-31), a locative PP was in focus. Comparing the results for directional PPs, presented in compressed form in (41), it may be seen that *at* is slightly worse in Norwegian and Danish, and *að* is significantly worse in Icelandic, while *som* is slightly better in Norwegian (the null complementizer gives the same results as in (32), i.e. good for MS and bad for Icelandic).

(41)	a.	Það var til bæjarins	sem/*að við fórum	(Ice)
	b.	Det var til staden	som/*att vi åkte	(Swe)
	c.	Det var til byen	?som/ ?at vi for	(Nor)
	d.	Det var til byen	*som/(?)at vi kørte	(Dan)
		it	*was to the.town as / that we drove*	

In a sense, then, directional PPs are more like DPs than locative PPs are. I will not attempt here to get closer to the heart of the matter, using category membership as a good first approximation, and taking locative PPs to be representative of PPs in general.[6]

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[5] Judgments varied somewhat with respect to the Icelandic. In particular two informants felt that the contrast between (37a) and (39a) was not so great as I have indicated, and one felt the same way about (36a) and (40a).

[6] With locative PPs pattern for example purpose clauses, which are PPs in Scandinavian (cf. (86b) in §6.3).

2.5. SUMMARY OF §§2.1-2.4

Here I briefly summarize the basic facts language by language. The null complementizer is impossible with a subject gap in all cases.

In Icelandic, *sem* is used with DP and PP; *að* is also possible with PPs. The null complementizer is never possible. Resultative APs are marginal with *sem*, and depictive APs are impossible.

In Swedish, *som* is always possible, and *att* never is. Both resultative and depictive APs are acceptable with *som* and with the null counterpart.

In Norwegian and Danish, *som* and the null complementizer are both possible with DPs; *at* and the null complementizer are both possible with PPs; and the null complementizer is possible with APs. With APs, there is in addition a distinction between resultative APs, which are marginally acceptable with *som*, and depictive APs, which are marginally acceptable with *at*.

2.6. MULTIPLY-FILLED COMP

There is one more set of data which will be relevant, available only from non-standard varieties of Danish and Icelandic. It is possible to find multiple introducing elements in clefts, as with relative clauses (cf. (15) in §1). The distribution of forms is not clear to me, and judgments are delicate, in part because the forms are stigmatized. Recall that in Danish, both *som* 'as' and *der* 'there' are (standardly) possible with subject gaps, as shown in (42).

(42) a. Det er Henning som ryger (Dan)
b. Det er Henning der ryger
it is Henning smokes
'It's Henning who smokes'

Recall, too, that multiple introducing elements were observed in relative clauses. This is the case in clefts as well. The examples in (43) are from Nølke 1984:100, who suggests that "[w]e may well find" them "in casual speech" (ibid.).

(43) a. Det er Peter, som der ryger (Colloquial Dan)
b. ? Det er Peter, at der ryger
c. Det er Peter, som at der ryger
it is Peter as that there smokes

Vikner 1991, as noted in §1.2, discusses relative clauses with multiple introducing elements, and notes that they are reduced in acceptability and that this may be the result of prescriptivism (cf. his pp. 132-3, esp. fn. 15). The reference grammar Allan et al. 1995:204 identifies the construction as being found (in relative clauses) in "colloquial language and dialects." In my own experience, some informants reject them outright, and there has been a tendency for informants from Western Jutland to accept them, suggesting that the form may be dialectal. An investigation is clearly needed of their distribution. However, in keeping with the observations of Vikner and others, I have simply labelled them as 'Colloquial Danish.'

I have marked (43b) with a question mark to indicate that my own informants were less comfortable with it, but Nølke does not indicate any such difference in relative acceptability among the examples. My findings are generally in line with Vikner's annotations for similar examples with relative clauses.

In addition, Nølke shows examples of *som* cooccurring with *at* when the focus is a non-subject DP, as in (44c) ((44a) is the standard form).

(44) a. Det er Peter som hun elsker (Dan)
b. Það er Pétur sem hún elskar (Ice)
c. ? Det er Peter som at hun elsker (Colloquial Dan)
d. ? Það er Pétur sem að hún elskar (Colloquial Ice)
it is Peter as that she loves

My own informants were hesitant about such examples (as with similar examples with relative clauses, cf. (16b) in §1.2 above) but on the whole, examples of the type in (44c)

patterned with the examples in (43), and most closely with the type in (43b). As shown, the same finding holds for Icelandic (cf. (16a)).

Such examples are particularly interesting as they suggest that the various relative elements do not occupy the same positions. As Nølke notes, no other orders of the various relative elements are possible (this is also the case for Icelandic). I discuss the implications for these facts in more detail below.

I have not yet encountered any Norwegian or Swedish speakers who accept such forms. However, the construction is also possible in colloquial Icelandic when the focus is a PP (compare (45a) to (30a) and (31a), and (45b) to (39a) and (40a)), and is in fact significantly better than when the focus is a DP, as in (44d).

(45) a. Það var í bænum sem að ég hitti Jón (Colloquial Ice)
it was in town as that I met John

b. Það er án klæða sem að hann þvær gólfið
it is without clothes as that he washes the.floor

Such patterns are not possible in Standard Danish, and preliminary investigations suggest that they are also unacceptable in West Jutlandic and colloquial Danish, but I have not been able to make a systematic inquiry.

3. Three types of predicate

As a prelude to discussing the structure of clefts, I discuss here some basic ideas about predicates. A widespread view of predicates is that they basically consist of an XP containing a gap which is assigned a theta-role. This is consistent with the VP-internal subject hypothesis outlined, e.g., in Koopman & Sportiche 1988, which leads to structures like that in (46a), and with the view of phrase structure in Stowell 1981, by which subject positions are available in all lexical XPs, as indicated in (46b-d). These assumptions, coupled with a theory of small clauses which takes them to contain a functional head, as in Bowers 1993 (cf. also Svenonius 1994, 1996), leads to structures like that in (46c). The status of noun phrases is more controversial, but assuming that predicative noun phrases are NPs and not DPs, the structure in (46d), as suggested in Holmberg 1993, is fully parallel to the other structures shown.

(46) a. Lemmings$_i$ [$_{VP}$ t$_i$ hibernate]

b. The doctor$_i$ was [$_{PP}$ t$_i$ in his office]

c. They regard him$_i$ as [$_{AP}$ t$_i$ unpredictable]

d. Anders$_i$ is [$_{NP}$ t$_i$ a professor]

Assume, then, that the bracketed expressions in (46) represent a type of predicate, and call it a type L[exical] predicate. Lexical predicates are XPs which contain a theta-marked trace of the element they predicate over.

However, it does not seem possible to assume that all predicate are type L. Heycock 1991 discusses a number of predicate types in which there does not seem to be a trace of the element predicated over. Consider, for example, the postulated structures in (47).

(47) a. Sea urchin roe is [$_{CP}$ exactly what$_i$ I need t$_i$]

b. Eels are [$_{AP}$ Op$_i$ hard to catch t$_i$]

The equative construction in (47a) has a CP containing a wh-chain in the predicate position. Assuming that the wh-word started in the empty theta-position, there is no theta-position to serve as the origin of the subject *sea urchin roe.* In (47b-c) are shown the classic construction known as 'tough-movement,' which has been argued to contain a null operator, and which consequently provides no theta-position for the subject (cf. *It is hard to catch eels*, where it can be seen that *hard* is a one-place predicate).

Assume, then, that there is another type of predicate, an XP which contains an operator-variable chain. Call this a type O[perator] predicate.

A third type of predicate, which will not be relevant in the discussion of clefts, is the equative type illustrated in (48a-e).

(48) a. Clark Kent is [$_{DP}$ Superman]

b. That's [$_{DP}$ me]

c. Spot is [$_{DP}$ my dog]

d. That's [$_{SC}$ a load off my mind]

e. For us to give up now would be [$_{CP}$ for Ed to get away with murder]

f. This analysis looks like [$_{CP}$ you've been reading too much Frege]

In such examples I know of no evidence for a gap or an operator. To this type might belong the non-standard type discussed in Heycock 1991 and illustrated in (48f). They may be referred to as type E[quative] (see Chierchia 1985, Heycock 1991, Bowers 1993, Svenonius 1994, and Heycock & Kroch 1997/this volume for discussion of this type).

4. Two analyses of RCs

Modifiers are a sort of predicate, an open expression. Some modifiers are plausibly type L, for example attributive adjectives. Others, given this typology, must be type O, for example relative clauses. Consider the classic analysis of English relative clauses sketched in (49) (based on Chomsky & Lasnik 1977).

(49) a. I saw the man [$_{CP}$ Op$_i$ that you described t$_i$]

b. I saw the man [$_{CP}$ who$_i$ you described t$_i$]

Here the structure for the two relative clauses is the same, with the overt complementizer pairing with the null operator, and the wh-operator cooccurring with a null complementizer. There are also analyses of relative clauses as involving movement of the head out of the relative clause. Schachter 1973, for example, analyzed relative clauses as being L-type predicates (in my terms). Specifically, the relative clause is a phrase of category S, and it modifies a node of category NOM. The NOM head of the noun phrase is empty (marked with the 'dummy symbol' Δ) in the underlying structure, and some NP moves from S into the empty NOM position. An illustration is provided in (50) (cf. Schachter 1973:33).

(50) a. [$_{NP}$ the [$_{NOM}$[$_{NOM}$ Δ] [$_{S}$ we made [$_{NP}$headway]]]]

b. [$_{NP}$ the [$_{NOM}$[$_{NOM}$ [$_{NP}$headway]$_i$] [$_{S}$ we made t$_i$]]]

Notice that the determiner takes a sister of the category NOM, while *make* takes an NP complement. This means that an NP must move into a NOM position. Translated into contemporary categories (and adding the complementizer), Schachter's structure looks like the one in (51), with CP adjoined to NP, NP a sister of D.

(51) a. [$_{DP}$ the [$_{NP}$ [$_{NP}$ Δ] [$_{CP}$ that we made [$_{DP}$headway]]]]

b. [$_{DP}$ the [$_{NP}$[$_{NP}$ [$_{DP}$headway]$_i$] [$_{CP}$ that we made t$_i$]]]

Here a DP moves into an NP position. This falsely predicts structures like **the some headway that we made*. Compare the very similar structure proposed in Kayne 1994.

(52) a. [$_{DP}$ the [$_{CP}$ [$_{SpecCP}$] [$_{C'}$ that we made [$_{NP}$headway]]]]

b. [$_{DP}$ the [$_{CP}$ [$_{SpecCP}$ [$_{NP}$headway]$_i$] [$_{C'}$ that we made t$_i$]]]

Here there is no need for 'Δ' because the sister of the definite article is not a nominative category with an adjoined CP, but the CP itself, which has an A-bar specifier position into which some element can move. Kayne suggests furthermore that what moves is not DP but NP, as indicated. However, since *make* ordinarily takes a DP complement, it is still unclear exactly what prevents **the some headway that we made*. Furthermore, Kayne assumes that in clefts (and in wh-relatives),[7] the moved element is in fact a DP. Compare Schachter's cleft structure in (53a) (category labels updated) with Kayne's in (53b).

[7] Kayne's structure for a *which* relative starts out as in [i]; from there, the DP *which book* moves to SpecCP, as in [ii]; then the NP *book* moves to SpecDP within SpecCP, as shown in [iii].

(53) a. It isn't $[_{PRED}\ [_{DP}$ the cough$]_i]\ [_{CP}$ that t_i carries you off]
b. It's $[_{CP}\ [_{DP}$ linguistics$]_i$ that we're studying $t_i]]$

In Schachter's structure, the CP is extraposed, and a DP moves out of it into an empty 'Δ' position in the VP, a sister of *be* labeled 'PRED.' In Kayne's analysis, the sister of *be* is not PRED but CP; once again, the 'Δ' position is unnecessary, as a SpecCP position is available. But in both analyses, what moves must be a full DP (or other XP, since various categories can be focused in the cleft construction). On Schachter's analysis, CP is a type L predicate, while on Kayne's analysis, it is C' which is a type L predicate.

There are various issues remaining to be cleared up with respect to the postulated NP movement for relative clauses. Various other problems arise with the movement analysis as well; see for example Borsley 1997 and Platzack 1997 on Kayne's analysis. However, movement analyses have been adopted for Scandinavian in Åfarli 1994 and Christensen 1995. Below I will not treat relative clauses in any detail but will use the classical analysis as a starting point for the investigation of cleft structures. However, I do accrue some evidence supporting a movement-type analysis for some types of cleft constructions.

5. An analysis of clefts

Consider again what I am calling the classical analysis of relative clauses. Here there is a null operator which may appear either with *that* or with a null complementizer, and in addition the possibility of wh-movement exists. Wh-movement always requires a null complementizer. Thus some element in SpecCP binds a trace in either case.

(54) a. the elephant $[_{CP}\ Op_i$ that t_i escaped from the zoo]
b. the elephant $[_{CP}\ Op_i\ \varnothing$ you released t_i from the zoo]
c. the elephant $[_{CP}\ which_i\ \varnothing\ t_i$ escaped from the zoo]

This analysis is adopted, in essence, for Scandinavian in Taraldsen 1978, and more recently in Platzack 1997, with *som* taking the place of *that* in (54a), and with the null variant in (54b) being essentially the same as the Scandinavian null variant. The version in (54c) is assumed for the stylistically formal wh-relatives mentioned at the end of §1.2.

Since clefts are, as Schachter 1973 established, cross-linguistically similar to relative clauses, the obvious starting point for an analysis of clefts is the analysis of relative clauses. This leads to something like (55) (several analyses from the seventies have something like these structures at a stage of the analysis, after extraposition of the clausal element from subject position; cf. §1.3 above).

(55) a. It was an elephant $[_{CP}\ which_i$ I released t_i from the zoo]
b. It was the city zoo $[_{CP}$ from $which_i$ I released an elephant $t_i]$
c. * It was from the city zoo $[_{CP}\ which_i$ I released an elephant $t_i]$
d. It was an elephant $[_{CP}\ Op_i$ that I released t_i from the zoo]
e. * It was the city zoo $[_{CP}$ from Op_i that I released an elephant $t_i]$
f. It was from the city zoo $[_{CP}\ Op_i$ that I released an elephant $t_i]$

The good examples are exactly parallel to the relative clauses. There are two bad examples, (55c) and (55e). (55e) is ruled out because the null operator cannot pied-pipe a preposition. And (55c) is ruled out because *which* is a DP; there is a matching requirement between the element in SpecCP and the element in focus. In (55b), that element is a PP, but in (55c), it is not.

The basic idea is that a relative clause-like CP is predicated over the element which I have been calling the focus. The focus plus CP appears as the complement of the copula, and

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i. $[_{DP}$ the $[_{CP}$ I read $[_{DP}$ which $[_{NP}$ book$]]]]$
ii. $[_{DP}$ the $[_{CP}\ [_{DP}$ which $[_{NP}$ book$]]_j$ I read $t_j]]$
iii. $[_{DP}$ the $[_{CP}\ [_{DP}\ [_{NP}$ book$]_i$ which $t_i]_j$ I read $t_j]]$

Compare (52), where what moves to SpecCP is NP.

a dummy subject appears. Thus the focus plus CP can be taken to form a small clause, perhaps with a null functional head as is often assumed for small clauses.

In the following subsections I will discuss the structure in (55), which is in some sense the zero assumption, and propose some modifications.

5.1. PROBLEMS WITH AN OPERATOR BASED ACCOUNT

The sketch of an analysis of cleft structure immediately above leaves several things to be explained. The first difference to note between these CPs and relative clauses is the fact that they can predicate over elements other than DP (or NP), as in (55f). Restrictive relative clauses are very much limited to DP modification, while clefts allow a wide variety of categories to be in the focus position. Consider, for example, the examples in (56). (56a-b) are attempts at modifying a PP. (56c) is an attempt at modifying an AP. All are quite ungrammatical.

(56) a. * We looked under the bed [Op_i that Ed had hid the money t_i]

b. * We sent it to the charity [Op_i that Bridget always donates her clothes t_i]

c. * The walls were bright green [Op_i that somebody had painted the ceiling t_i]

If the null operator in (55f) can bind a non-DP trace, it is unclear why the examples in (56) are bad. Non-restrictive relatives can appear as clausal modifiers, but they do not seem to be able to modify XPs in a sentence other than DP. Consider examples like those in (57).

(57) a. We found the money under the bed, which was a terrible place to hide it.

b. We found the money under the bed, a terribly ill-conceived hiding place.

c. * We found the money under the bed, which Ed had hidden it.

It may seem at first that (57a) has a relative clause modifying a PP. However, note that an appositive DP, as in (57b), is also licit here. In general, the distribution and intonation of non-restrictive relatives suggests that of appositive DPs. I suggest that non-restrictive relatives are really appositive; possibly, there is a null DP head in (57a), so that *which* in (57a) corresponds not to *under the bed* but to a null DP having the same force as *a place* does in (57b). Note that when it is clear that the gap in the relative clause corresponds to a PP, as in (57c), *which* is quite impossible.

However, some varieties of English may allow non-restrictive relative clauses at least over verb phrases. This is suggested by the pair in (58).

(58) a. If we get the money, which I expect we will, we'll give it to you.

b. * If we get the money, something which I expect we will, we'll give it to you.

Whatever the correct analysis of non-restrictive relative clauses, the operator that appears with *that* in restrictive relatives always binds a DP gap, and is therefore unlike the one in (55f). In fact, the problem is more general. Null operator constructions do not typically allow a variety of categories (cf. Browning 1987). Consider the *tough* construction in (59a) or the parasitic gap constructions in (59b-c).

(59) a. * After lunch is difficult [Op_i to give a talk t_i]

b. * In which bed did you hide an egg [Op_i before you slept t_i]?

c. * Why did you sell the car [Op_i before you got rid of the motorcycle t_i]?

(59b) cannot be read with a parasitic gap in the *before* clause. This is explained if the null operator which appears in parasitic gap constructions cannot bind a PP trace. If *why* leaves a non-DP trace (plausible, given e.g. that it does not need Case), then this would also explain why (59c) cannot be understood with a parasitic gap in the *before* clause.

Other questions are raised by the structures in (55) as well. For instance, if the copula can appear generally with a small clause complement and a dummy *it* subject, why are other types of predicates not allowed? For instance, small clauses with AP and DP predicates, like those in (60), are legitimate elsewhere, so why can they not appear in the cleft construction?

(60) a. * It was an elephant upset
b. * It was an elephant my pet

Moreover, if relative clause-type CPs like those in (55) are possible as small clause predicates, why do they not show up more generally in small clause contexts? Assuming that the copula generally takes a small clause, and allows raising of the subject (as in Stowell 1981), then (61a) is a small clause context; and (61b) is another one, on very common assumptions. But the relative clause-type predicate is quite impossible.

(61) a. * An elephant was which you released from the zoo
b. * I consider the elephant that you released from the zoo

I have now raised three questions regarding the analysis sketched in (55). First, there is the question regarding non-DP null operators. Second, there is the question regarding the distribution of the postulated CP predicate. Third, there is the question regarding the distribution of predicates in the cleft construction. I will now deal with these three questions in turn.

5.2. AN ARGUMENT FOR MOVEMENT

First, with respect to the nature of the null operator, it is perhaps an overstatement to claim that null operators only bind DP traces. There are many examples in the literature of null operators which have been postulated to bind categories other than DP. For example, yes-no questions are commonly assumed to involve a null operator which presumably binds something corresponding to the polarity of the sentence. Constructions such as comparative deletion construction (*Olaf was quicker than we were*) have been taken to contain a null operator (binding an AP trace in that case). It has been proposed, for example in Aoun & Li 1993 for Chinese, that languages without overt wh-movement have null operator movement instead. Such a null operator must bind non-DP categories in examples like that in (62) (from Aoun & Li).

(62) [Op] ta renwei Zhangsan weishenme laile? (Mandarin Chinese)
he think Zhangsan why came
'Why does he think Zhangsan came?'

A similar case can be made for Northern Norwegian, where degree questions fail to show any overt wh-movement.

(63) [Op] er du gammel? (Northern Norwegian)
are you old
'How old are you?'

The operator here, I argue in work in progress, binds a degree variable provided by the AP.

Thus it is reasonable to assume that there are in fact operators that bind elements other than DP trace. However, the operators postulated in the work discussed above are restricted to very specific bindees (polarity, for yes-no questions, a class of indefinites, in (62), a degree variable, in (63)). It is still unclear that a null operator such as the one in (55d, f) should be postulated. It would have to be allowed to bind virtually any category, cf. the examples in (1) in §1. If such an operator exists, it is quite unclear what prevents it from appearing in other constructions than the cleft, i.e. what prevents such constructions as (56-59).

Instead, I propose that that-clefts are, at least in some cases, the result of movement, somewhat as in, e.g., Schachter 1973, Pinkham & Hankamer 1975, and Kayne 1994. However, unlike those works, I do not assume that *which*-type clefts are the result of movement out of the CP, and furthermore I am not committed to any modern Scandinavian relative clauses being derived by movement of the NP head (cf. Platzack 1997). Specifically, I assume the structures in (65) for the CP predicate in English clefts; the classical structures for relative clauses are given here in (64) for comparison.[8]

[8] Pinkham & Hankamer 1975 argue as I do that there are two types of clefts, one derived by movement of the focus, and allowing a range of categories, and the other having the mid-70's equivalent of a null operator analysis and allowing only DP foci. They argue on wholly different grounds, however, and it does not seem that their argumentation goes through. See Gundel 1977 for discussion.

(64) a. RC: $[_{CP}\ wh_i \quad \varnothing \quad [_{IP} \ldots t_i \ldots]]$

b. RC: $[_{CP}\ Op_i$ (that) $[_{IP} \ldots t_i \ldots]]$

(65) a. Cleft: $[_{CP}\ wh_i \quad \varnothing \quad [_{IP} \ldots t_i \ldots]]$

b. Cleft: $[_{CP}\ t_i$ (that) $[_{IP} \ldots t_i \ldots]]$

The (a) structures are essentially identical, while the (b) structures are importantly different: in the relative clause, there is a null operator, which I assume is of the category DP; this means that the whole relative clause is a type O predicate, in the sense explained in §3. The Cleft predicate in (65b), on the other hand, is a type L predicate: it contains a trace for a moved element which is not bound within the predicate itself. This trace may be any category, in principle.

These structures turn out to be nearly identical to the structures proposed for clefts with *that* and *which* in Kiss 1996. There, what I have been calling a small clause is a FocusP, headed by a Focus head. The element that moves (in clefts with *that*) or is base-generated (in clefts with *who* or *which*) in SpecFocusP is interpreted as having 'exhaustive' focus, called 'identificational focus' in Kiss 1997. The only structural difference is that Kiss assumes that the copula originates in F, and raises out of it, while I assume that the copula selects the small clause as its complement.

There is a slight contrast in (66) that might be taken as support for this distinction. The idea would be that (66b) is perfect, because the reflexive actually moves, and can be reconstructed, while (66a) is less than perfect, because the reflexive is never actually in a position to be bound by its antecedent, and must be interpreted via an operator.

(66) a. ? It is himself who John likes best

b. It is himself that John likes best

It may at first seem to be a disadvantage of this analysis that it fails to more closely unify relative clauses and clefts. On the contrary, I believe that this is an advantage of the analysis. There are several indications that cleft predicates and relative clauses are not the same. For example, the distribution of wh-elements is different. Consider the pairs in (67).

(67) a. the part of the airport where they stopped me

b. * It was in customs where they stopped me

c. the reason why they stopped me

d. * It was because of my hair why they stopped me

Here it can be seen that *where* and *why* are possible relative operators, but not possible cleft operators (note also that even the occasional wh-elements in MS relative clauses, such as Swedish *vars* discussed in §1.3, are not possible in clefts). Similarly, Icelandic, Norwegian, and Danish allow *að/at* in clefts, but not in relative clauses, as discussed in §§1-2.

The operator analysis sketched in (65a) raises questions regarding case; there must be some mechanism for assigning case to the focus. Examples like those in (68) show that in English, this case is the objective one (but cf. §2.1 in which it is noted that Scandinavian shows connectivity effects here, and that Icelandic also allows nominative in general).

(68) a. It's me who always hurts myself/himself.

b. * It's I who always hurt myself.

I will not propose any specific case-assignment mechanism here, leaving the problem unresolved. More troubling is the fact that the movement analysis of (65b) falsely predicts (69b) rather than (69a).

(69) a. It's me that always hurts myself/himself.

b. * It's I that always hurt myself.

This problem does not arise in Scandinavian (cf. §§6.2-3 below), and I will leave it as an unresolved problem for English.

If clefts and relative clauses are two different kinds of structure, then why are they so alike, a fact stressed by Schachter 1973? I think that they are alike because they both

represent ways of converting a clause into a type of predicate. However, they are different in that the relative clause, a modifier, is a predicate of type NP/NP or DP/DP, in categorial grammar terms, while a cleft predicate is a predicate of type S/DP, in the case of clefts with *which*, and S/XP, in the case of clefts with *that*.[9]

It can be assumed that this distinction has its locus in the complementizer (essentially following the line in Rizzi 1990). This means there is a variety of null complementizers. There must be a null +wh relative complementizer, which allows *which*, *who*, *why*, and *where*, but disallows *what*, *whichever*, and various other wh-elements. It heads a CP which can be adjoined to NP (or DP) (Rizzi 1990 marks it '+predicative'). I assume that this has to do with its semantic type; perhaps this C converts the operator-variable chain into an open position in the semantics (like a theta-position) which can only be discharged through identification, in the sense of Higginbotham 1985. Another way to describe the restriction on the distribution of relative complementizers would be to say that the relative complementizer creates an open NP position, rather than a DP position; since NPs are not valid arguments, it would not be possible to use the relative clause as a small clause predicate.

In addition, there must be a +wh complementizer which appears with *which* and *who* (but not *what* or *why* or *where*) and which heads a CP that appears as a small clause predicate; this C head must convert the operator chain into an open DP position (uncontroversially, in fact, since *which* and *who* are DPs). Below I will propose an explanation for why such CPs do not appear more generally as small clause predicates.

Continuing on the assumption that the differences among clauses are determined by the features of the complementizer, there must also be a variety of –wh complementizers. There must be a *that* which heads a relative clause, and which requires a null operator of the category DP in its specifier (presumably handled by checking theory). There must also be a null variant of this complementizer, which is not a proper governor (because it cannot cooccur with a subject gap). There must be another complementizer *that* which, like the +wh cleft complementizer, heads an open proposition, but which, unlike that element and unlike the relative *that*, does not require any operator in its specifier. Finally, there must be a null non-governing variant of this cleft *that*.

Another option would be to try to work out a theory of operators and chains that derived the various differences. On such a theory, for example, there would not be many complementizers *that*, but one; the null operator that appears in relative clauses would be of a type that binds a DP gap but creates an open NP position. The cleft CP would become a type L proposition simply by virtue of a constituent moving out of it. I will not try to work out such a theory here but simply note its appeal.

5.3. ANSWERING THE QUESTIONS

Now it is possible to answer the questions raised in §5.1 above regarding the first version of the analysis sketched at the beginning of this section. The first question had to do with why such a wide range of categories were allowed , when null operators typically have a very restricted range of binders. In the new version of the analysis, there is no null operator; the clefts that allow a range of categories, namely the clefts with *that* and its null counterpart, involve actual movement.

The second question had to do with why other categories of predicate were not possible in the cleft construction. Here I will suggest that this is because the *it* in subject position in a cleft is extraposition *it*, an element independently observed only to appear in connection with elements of the category CP. I.e., the dummy subject *it* in the cleft in (70) is linked to the CP in essentially the same way as the subject in the structure in (70b).

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[9] In Montague 1973, relative clauses are type <e,t> (basically equivalent to S/DP), and a special rule allows them to combine (under intersection) with nominative elements (NPs in the terms assumed here), which are also <e,t>, to produce nominative elements of type <e,t>. However, intersection seems to me too coarse a device for noun phrase modification, and I assume that relative clauses are actually second-order predicates over NPs, i.e. type <<e,t>,<e,t>>.

(70) a. It was this little tube of glue that he shoplifted
b. It was unfortunate for everybody involved that he shoplifted

To see the CP restriction on extraposition *it*, consider (71). (71a-b) show that extraposition *it* can appear even when the predication over the CP subject is equative. (71c) is an example with a relatively heavy AP subject; cf. Svenonius 1994 on non-entity-denoting elements as subjects. (71d) shows that extraposition with *it* is not possible for the AP.

(71) a. That the king was foolish was the point of the story
b. It was the point of the story that the king was foolish
c. Expensive for me is cheap for everybody else
d. * It is cheap for everybody else expensive for me

Thus, we do not expect to find cleft constructions with non-CP predicates. Consider the derivations sketched in (72).

(72) a. was Ted Turner [$_{CP}$who gave a billion dollars to the UN]
b. It was Ted Turner [$_{CP}$who gave a billion dollars to the UN]
c. was Ted Turner [$_{AP}$ eccentric]
d. * It was Ted Turner [$_{AP}$ eccentric]
e. Ted Turner was eccentric

In (72a-b), the copula takes a small clause, and because the predicate there is CP, *it* can be inserted in subject position. In (72c), the copula takes a small clause, but since there is no CP, *it* cannot be inserted. Instead, the only option to satisfy the EPP in the main clause is to raise the subject of the small clause, resulting in (72e).

This leads to the third question originally posed in §5.1, namely, why do CP predicates not turn up in other contexts than that of the cleft? Namely, why do we not find structures of the type in (73), where for example (73a) is derived straightforwardly from (72a)?

(73) a. * Ted Turner was who gave a billion dollars to the UN.
b. * I consider Bill Gates who has the most money.
c. * With Michael Milken that got out of jail, things should get fun.

Here I would like to suggest that this is because extraposition *it* is not only possible in clefts, it is in fact necessary. Specifically, I propose that *it* serves not only to satisfy the EPP, but also to anchor the CP predicate, in the sense of Svenonius 1994, an analysis of clausal anchoring which builds on Enç 1987, and Farkas 1992.

The concept of anchoring which is relevant here is a point of interface between the syntax and the semantics. In order to be interpreted as a proposition, CP must be anchored to some set of possible worlds. I have argued (Svenonius 1994) that this anchoring is mediated by the complementizer. Various factors affect the choice of anchor, including the verb used; cf. the factive (74a), where the content of the embedded CP is presupposed to be true, and the non-factive (74b).

(74) a. The UN realizes that the US will never pay its debt
b. The UN suspects that the US will never pay its debt

It has been pointed out that anchoring is sensitive to syntactic structure (cf. Kiparsky & Kiparsky 1970); although both of the sentences represented by (75a) are ordinary, the sentences in (75b) are likely to induce factivity, with the result that the version with *false* is anomalous.

(75) a. It is true/false that Clinton has attacked Iraq.
b. That Clinton has attacked Iraq is true/#false.

It seems that DPs can provide anchoring as well; compare (76a), which has a factive interpretation, to (76b), which does not.

(76) a. the realization that ozone depletion is harming amphibians
b. the suspicion that ozone depletion is harming amphibians

Given that a DP may provide anchoring, and that a CP must be anchored, I propose that in the configuration of the cleft, there is no anchor for the CP, and this is why extraposition *it* must be inserted. Consider again the structures represented in (72a-b), slightly modifed here as (77a-b).

(77) a. was Ted Turner [$_{CP}$that gave a billion dollars to the UN]
b. It was Ted Turner [$_{CP}$that gave a billion dollars to the UN]
c. * [$_{CP}$that gave a billion dollars to the UN] was Ted Turner

In (77a), I argue, there is no anchor for the CP. This leaves it without a complete interpretation. When extraposition *it* is inserted, as in (77b), I suggest, CP is anchored to the real world as a presupposition. This is the semantic contribution of extraposition *it*, not substantially different from the semantic contribution assumed for referential *it*, which is to point out some familiar non-human entity in the context of the discourse. This anchoring is overridden in examples like (75a), where the predicate provides a different, non-presuppositional anchoring. The point with (75b) was that when the syntactic configuration is disturbed, the anchoring supplied by the predicate is no longer available; in that case, presupposition is the default anchoring (see Svenonius 1994 for details).

The next obvious question is why (77c) is not allowed, given that movement to subject position is generally allowed for CPs. I assume that it is because the CP has no anchor in that position. I must assume that the default anchoring (as in (75b)) is not available in (77c) as a result of the CP in that example being a predicate.

This is generally consistent with the rare nature of CP predicates. Most apparent cases of CP predicates can be shown to actually be subjects, in inverse constructions (Moro 1997, Heycock 1994). For example, (78a) looks like a case of a CP predicate. However, it should actually be analyzed as in (78b), where a DP predicate has been promoted from the small clause complement to the copula. Heycock 1994 demonstrates this with examples like those in (78c-d), where, she argues, in the small clause complement to *consider*, inversion is not possible.

(78) a. John's problem was [that nobody wanted to know about his problem]
b. John's problem$_i$ was [that nobody wanted to know about his problem t_i]
c. I consider [that nobody cares the problem]
d. * I consider [the problem that nobody cares]

The CPs in (78a-c), then, are in subject positions, and are different from the cleft CPs in not being predicates (they also do not contain gaps or operator-variable chains). Truly predicative CPs, it appears, cannot be licensed by their own subject, nor by any default rule. They can only be saved by the insertion of extraposition *it*.

6. Scandinavian Clefts

Here I briefly summarize the findings from §2 above, the patterns for Scandinavian clefts, and then show how the analysis described in §5 applies to Scandinavian.

6.1. SWEDISH

First, recall that Swedish has *som* optionally in all cases, except where there is a subject gap, in which case *som* is obligatory. A few representative examples are repeated here from §2. Swedish clefts never contain *att*.

(79) a. Det var Jon (som) jag träffade i staden (Swe)
it was Jon as I met in town
b. Det var i staden (som) jag träffade Jon
it was in town as I met Jon
c. Det var rött (som) han målade huset
it was red as he painted the.house

This suggests, in the context of the current analysis, that Swedish *som* is like English *that*, a category-neutral C head which allows movement to form an L-type predicate from the CP. Recall from §1 that there was evidence that *som* was a head in Old Norse as well. The optionality of *som* is most simply analyzed as being due to a null counterpart of *som*. As for the difference between subject gaps and other gaps, I have no improvement to make on the analysis of Taraldsen 1986 of *som* as a proper governor, its null counterpart failing to be one. Recall that predicative and depictive APs are perfectly acceptable in clefts in Swedish, with and without *som*. This is expected, given that all clefts are derived by movement.

6.2. NORWEGIAN AND DANISH

Next, there is the Norwegian/Danish pattern (there were, it will be recalled, only slight differences between the two standards). Norwegian and Danish fairly strictly use *som* only with DP foci.[10]

(80) a. Det var Jon (som) eg traff i byen (Nor)
it was Jon as I met in town

b. Det var i byen (*som) eg traff Jon
it was in town as I met Jon

c. Det var raudt (?som) han måla huset
it was red as he painted the.house

Thus it is natural to take *som* to be an operator of the category DP, like English *which*. Of course, it could be maintained that *som* is a complementizer, as in the analyses (of relative clauses) in Taraldsen 1986 and Vikner 1991, among others. This is especially natural in light of the facts from subordinate interrogatives, in which *som* cooccurs with wh-elements, as in (14b) in §1 above, or the similar (81).

(81) Eg lurer på kven som ikkje har betala (Nor)
I wonder on who as not has paid
'I wonder who hasn't paid'

But if we are to assume that *som* is a head, then we need a way to restrict the cleft focus to DP. This could be accomplished either by supposing that *som* obligatorily enters into a spec-head configuration with a null DP operator, essentially as in Vikner 1991, or that there is movement but that *som* checks DP features in SpecCP, disallowing non-DPs from passing out of CP. On any of these variants, *som* can in some sense be said to have DP features. However, the multiply-filled COMP examples from non-standard Danish, some of which are shown here, make it appealing to put relative and cleft *som* in SpecCP, rather than in C as in interrogatives.

(82) a. Det er danskene som at der laver det bedste øl (Colloquial Dan)
it is the.Danes as that there make the best beer

b. ? Det er Frankrig som at Danmark skal spille mod på lørdag
it is France as that Denmark shall play against on Saturday

Assuming, as is natural, that *at* is a complementizer element, either we must have CP recursion in (82) (as explicitly argued for by Vikner 1991), or else *som* is in SpecCP. I will assume that *som* is in fact an operator that lands in SpecCP, exactly like English *which*.

Recall that Norwegian and Danish allow *at* with PPs.

(83) a. Det var i byen at eg traff Jon (Nor)
it was in town that I met Jon

b. * Det var Jon at eg traff i byen
it was Jon that I met in town

c. ? Det var naken at han vaska golvet
it was naked that he washed the.floor

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[10] Actually, finite clauses and infinitives with the infinitive marker *å* also appear fairly freely in clefts with *som*, but they appear generally in DP contexts in MS, for example as the complements to prepositions.

Either there is an operator which binds just PP traces, or else clefts with *at* are derived by movement. I will assume that they are the result of movement, and that *at* is in C. This *at* must have prepositional features which prevent non-PPs from moving through SpecCP.

Recall that the one time *at* appeared with a DP focus was in combination with other relative elements, as in (82). If *som* is a complementizer in a CP above the one headed by *at*, as Vikner 1991 proposes, then this remains unexplained. However, if *som* has whatever features *at* checks, then sentences like those in (82) are expected to be good. Thus, although *som* only binds DP trace, it appears to have P features.

Moving on to the null complementizer, recall that Norwegian and Danish are rather liberal with respect to what categories could appear as the focus in a cleft (cf. the examples in (80), or those in (1) in §1). This kind of categorial freedom was what motivated a movement analysis for English. Thus, I suggest, Norwegian also has a complementizer like English *that* and Swedish *som* which allows any category to move out of CP; more specifically, it is like the null variants of those complementizers, since it, like them, is not pronounced and is not a proper governor.

With respect to AP, recall that AP foci were generally acceptable with no complementizer. This is now expected. In finer detail, a resultative AP was marginally acceptable with *som* (cf. (80c)), suggesting that those APs are marginally DP-like in the relevant sense. A depictive AP was marginally acceptable with *at* (cf. (83c)), so those APs are marginally like PPs.

Danish also has the element *der*, with subject DPs.

(84) Det var Jon der traf mig i byen (Dan)
it was Jon there met me in town

Recall, too, that *der* can cooccur with other elements, in non-standard Danish.

(85) a. Det er Peter, som der ryger (Colloquial Dan)
b. ? Det er Peter, at der ryger
c. Det er Peter, som at der ryger
it is Peter as that there smokes

Nølke 1984 proposed that *der* is in subject position, like expletive *der*. This is also adopted and defended in Taraldsen 1992. Still assuming that *at* is in C, this accounts neatly for the obligatory ordering seen in the construction. Vikner 1991 argues against this approach, suggesting that relative *der* occupies C^0; but in order to explain the cooccurrence he is forced to allow CP-recursion, and in order to explain the obligatory order of the various relative elements, he is forced to make additional assumptions. I will not review the various arguments here, but refer the reader to the literature.

This set of assumptions straightforwardly captures the observed combinations of relative elements: *som* is a DP operator in SpecCP, *at* is in C and has P features, and *der* is or can be in SpecIP and has subject features. One last comment is in order for (85b), because there is no prepositional element in the specifier of *at*. I must assume that although *at* prevents non-PPs from entering its specifier, it does not require anything to appear there. The subject *Peter* in (85b) is base-generated, as *der* creates a type O predicate, so nothing ever moves through the specifier of *at* in (85b).

6.3. ICELANDIC

The last pattern is the Icelandic one. In Icelandic, *sem* was seen to allow only DP and PP foci in clefts, though perhaps also marginally AP, as in (86c) (from Thráinsson 1979:77, who does not mark it as marginal).

(86) a. Það eru Íslendingarnir sem eru bestir í skák. (Ice)
it are the.Icelanders as are best in chess
'It is the Icelanders that are best at chess'

b. Það var til að búa til kakó sem við keyptum mjólk.
it was to to prepare to cocoa as we bought milk
'It was to make cocoa that we bought milk'

c. ? Það er gulur sem bíllinn er
it is yellow as the.car is

The pattern can be captured by assuming, as for Norwegian and Danish, that *sem* is like English *which*, an operator landing in SpecCP. However, unlike *which* and Norwegian and Danish *som*, *sem* is not strictly limited to binding DP trace; it can also bind PP trace. This can be described by assuming that *sem* is '–V,' the featural specification that N and P have in common (recall that Norwegian and Danish *som* was argued to have P features, even though it could only bind DP trace).

If this is the right analysis, then *sem* has apparently been reanalyzed since Old Norse times (cf. (8b) in §1.1). This also means that there must be a null complementizer in Icelandic, though it can only cooccur with the operator element *sem*. Jóhannes Gísli Jónsson (personal communication) points out that the lack of inflection on *sem* makes it an unlikely pronoun in Modern Icelandic. However, an advantage of the analysis is that it captures the possibility, noted for colloquial Icelandic, of *sem* cooccurring with *að*, without multiplying head positions.

(87) a. ? Það er Pétur sem að hún elskar (Colloquial Ice)
it is Peter as that she loves

b. Það er án klæða sem að hann þvær gólfið
it is without clothes as that he washes the.floor

If *sem* is not in SpecCP, then these examples require either CP recursion, as in Vikner 1991, or a split Comp, as in Rizzi 1995. Note also that the assumption that *sem* is an operator, and that the DP has not moved, allows an account of the cases in which the case on the focus fails to match that of the gap, as seen in (28-29) above, in §2.1, or as in (88a).

(88) a. Það er brennivín sem hann varð fullur af (Ice)
it is liquor.NOM as he became drunk of
'It's liquor he got drunk on'

b. * Brennivín varð hann fullur af
liquor.NOM became he drunk of

c. Brennivíni varð hann fullur af
liquor.DAT became he drunk of
'Liquor, he got drunk on'

(88b-c) show that topicalization requires the case on the fronted element to match that of the gap, i.e. there is connectivity between the moved element and the gap. The argument here is reminiscent of early arguments from failure of connectivity for non-movement analyses of clefts, e.g. as in the examples in (89) (cf. also §5.2 above).

(89) a. It's myself I don't like

b. It's me I don't like

c. * Me, I don't like

(89a) shows connectivity, which is consistent with movement, but which of course can be achieved in other ways as well. (89b) shows failure of connectivity, which is not consistent with more uncontroversial cases of movement, such as topicalization, shown in (89c). The failure of connectivity argues that there is (or can be) an operator in clefts with *sem*, not that *sem* actually is that operator. However, I will continue to assume that *sem* in Icelandic clefts is an operator, and that it occupies SpecCP.

Thráinsson 1979, chapter 2, argues, following Pinkham & Hankamer's 1975 analysis of English, that Icelandic allows two different derivations for clefts: one is relative extraposition, and the other is a cleft transformation. Clefts with DP foci are ambiguous, and clefts with non-DP foci must come from the cleft transformation. Thus, the relative structure in (90a), which requires nominative case on the predicative DP, is the source for the version of the cleft in (90b) that has nominative case on the focus, while the version of (90b) that has dative case on the focus is derived by a cleft transformation.

(90) a. Það sem ég gleymdi var stefnumótið /*stefnumótinu. (Ice)
it as I forgot was the.date.NOM/ the.date.DAT
'What I forgot was the date'

b. Það var stefnumótið /stefnumótinu sem ég gleymdi.
it was the.date.NOM/the.date.DAT as I forgot
'It was the date that I forgot'

However, as noted in §1.3 above, an extraposition analysis raises more questions than it answers. I will assume instead that both versions of (90b) involve the same structure, and that the difference has to do with the assignment of nominative case, which is less restricted in Icelandic than in English or MS.

Icelandic, it will be recalled, also allows clefts just with *að*, but only when the gap is a PP.

(91) a. * Það var Jón að ég hitti í bænum (Ice)
it was Jon that I met in town

b. Það var í bænum að ég hitti Jón
it was in town that I met Jon

c. * Það var rautt að hann málaði húsið
it was red that he painted the.house

Here, as with Norwegian, it could be assumed that *að* is a complementizer which allows movement, like English *that*, except that *að* checks prepositional features. Interestingly, there is also a preposition *að*, historically the same word as the complementizer (Danish also has the preposition, *ad*). Thus it is even more plausible for Icelandic than for Norwegian that *að* checks prepositional features on the trace in its specifier. In Icelandic, there is no null counterpart to *að*.

The facts about cooccurrence are also satisfyingly solved. *Að* appears (albeit marginally) alongside *sem* in clefts with DP foci, as in (87a), when it could not appear by itself. The analysis allows an explanation of this fact: *að* is impossible in clefts with DP foci because *að* must check prepositional features. But *sem* has been shown to be –V, neutral between a prepositional and a nominal. So when *sem* appears in the specifier of *að*, it plausibly checks the prepositional features, even when itself binding a DP trace.

A final comment about Icelandic concerns the marginally acceptable resultative and predicative AP examples, as in (86c). If they are to be captured, a simple way to do so would be to assume that they can marginally be treated as DPs, or rather, their traces can marginally be treated as DP traces. Depictive AP was generally impossible in Icelandic clefts, and this is described by the proposal made here.

7. Conclusion

As I stated in the introduction, this is a working paper and the primary goal has been to present a tangled thicket of data in as clear a way as possible. In particular I have not done justice to the previous literature, especially the wealth of literature on relative clauses. The differences among the Scandinavian languages in the cleft construction turn up most clearly in what relative element is used, and this is what I have concentrated on. Descriptively, there is a correlation between what can show up as the focus of the cleft and what can show up as the introducing element in the CP predicate of the cleft.

In §5 I examined a similar correlation in English and suggested that there is evidence for movement of the focus out of the cleft predicate, in some cases (evidence which is lacking in relative clauses). The fact that Kiss 1996 independently arrived at the same conclusion is quite encouraging. However, the analysis entails that there are movement and non-movement structures that look superficially very similar, for example, the pair in (66), or the similar pair in (92).

(92) a. ? It was himself who John was going to talk about

b. It was himself that John was going to talk about

I have suggested that in the example with *who*, *who* is an operator occupying the specifier of a CP which functions as a type O predicate over a base-generated small clause subject, while

in the example with *that*, *that* heads a CP which functions as a type L predicate over a DP which has moved out of it.

Setting this interpretation of the distinction to work on the Scandinavian data, I am led to claim that the same contrast holds for the pair in (93), where Norwegian *som* is like English *who*, while Swedish *som* is like English *that*.

(93) a. ? Det var seg sjølv som han skulle snakke om (Nor)
b. Det var sej själv som han skulle tala om (Swe)
it was RFX self as he should talk about

The judgments seem consistent with the hypothesis, though the contrast is subtle, as it is in (92), and the explanation for it is not entirely understood (specifically, it is unclear why the (a) examples should be good at all). Note that there is no contrast in (94), nor is there expected to be, since the null complementizers in Norwegian and Swedish are alike.

(94) a. Det var seg sjølv han skulle snakke om (Nor)
b. Det var sej själv han skulle tala om (Swe)
it was RFX self he should talk about

I have stated the restrictions in terms of categorial features, and have located them in the complementizers as well as on the various operators proposed. None of these moves have been extensively justified. In particular, the restrictions as stated are too coarse to capture the observed patterns in the data, such as the differences between depictive and resultative APs, or the difference between locative and directional PPs. I believe that a more refined understanding of the relation between syntactic category and semantic interpretation is needed.

Other shortcomings of the analysis are many. No explanation has been given for the consistent failure of null complementizers to allow subject gaps; the claim that they are not proper governors is simply descriptive. The connection between the Danish use of *der* as an expletive and its use as a relative element has not been explored. The *som* discussed here and the *som* which appears in embedded interrogatives (and in main clause interrogatives in some dialects; see Åfarli 1986, Rice & Svenonius to appear) appear to be more distant from one another than they are on other analyses, where they are both heads. The exceptional nature of the predicates postulated in §5.2 , which predicate over such a wide range of categories, has not been investigated. I can only say that I hope to address these and other problems in the not too distant future.

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Transparent Free Relatives*

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1. What it's about

The literature recognizes two types of Free Relative with *what*. Ordinary FRs as in (1) function like definite or universal argument DPs (Jacobson 1995). In specificational pseudocleft sentences (2), the wh-clause has been argued to form the predicate of the matrix clause, taking the adjective as its subject (Williams 1983, Iatridou & Varlokosta 1996).

(1) John likes [what(ever) I cook]
(2) angry is [what John is]

The examples in (3) belong to a third type which does not reduce to either of the first two, although it shares properties with both. This type has gone largely unnoticed—the only discussion I have seen is in McCawley (1988). I call them *Transparent Free Relatives* (TFRs), for reasons that will become clear. TFRs occur as arguments (3a), predicates (3b) or attributes (3c):

(3) a. [what seems to be a tourist] is lying on the lawn.
b. John is [what you might call a fool / stupid]
c. a [what you might call tricky] example

This construction shows syntactic behaviour which leads to a kind of paradox; with respect to various syntactic tests, the free relative behaves as if it were invisible. The goals of this paper are to sort out the relevant properties of TFRs, by contrasting them with ordinary FRs, and to suggest how to resolve the paradox they present. Section 6. adds some remarks on the relation of TFRs to specificational pseudoclefts.

2. Transparent Free Relatives *vs.* Ordinary Free Relatives

Ordinary FRs have the internal syntax of complement wh-clauses. The same wh-phrases (ignoring the *-ever* morpheme) are used in both: *what(ever)* (N); *which(ever)* (N); *who(ever)*. However, free relatives have the distribution of DPs, being licensed in DP-only positions, such as the goal argument position of ditransitive verbs (4)-(5). I shall assume a structure like (6), where a zero determiner takes a wh-CP complement:

(4) he gave whoever she named a kiss

(5) * he V [whether I failed] NP (*there is no such verb*)

(6) $[_{DP}\ \varnothing_D\ [_{CP}\ what_j\ \varnothing_C\ [_{IP}$ you ordered t_j]]]

FRs also get interpreted like DPs, rather than interrogatives. In particular, they get a definite or universal reading, rather than an indefinite reading (7) (Jacobson 1995). As expected, they are also barred from the indefinites-only position in *there*-sentences (8).

(7) [what you ordered] is on the desk
≠ something which you ordered ...
= the thing(s) which you ordered ...

(8) * There is [what you ordered] on the desk.

The properties of bare *what* are important in what follows. Jacobson (1995) notices that Free relatives with bare *what* are semantically vague with respect to the cardinality of the sets they can denote. Thus, while

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example (9a) denotes a properly plural set, and (9b) denotes a singleton set, (9c) can be used denote either a singleton or a plural set. However, bare *what* is grammatically singular, regardless of interpretation: cf. (10), where *what* itself triggers singular agreement inside the FR; and the FR itself triggers singular agreement in the higher clause:

(9) a. whatever dishes John ordered — *proper plural*
b whatever dish John ordered — *atom*
c. what(ever) John ordered — *either*

(10) [what(ever) is (*are) on the table], belongs (*belong) to me.

Also, FRs with bare *what* cannot be used to refer to humans. The deviance of (11a,b) is due to the fact that *invite* selects a [+human] object. Neither bare *what* nor an FR headed by *what* can fulfill that requirement.

(11) a. # I liked what he invited — (*ok:* what students)
b. # I invited what he recommended

Note that neither [singular] nor [–human] is a rigid property of *what*, which as a determiner combines freely with [+human] NPs and with plural NPs.

Transparent FRs have the form of wh-CPs headed by bare *what* with the specific format (12). They always contain an internal small clause whose subject is *what*, and whose predicate XP can either be a DP or an AP. The wh-pronoun can be moved from a nominative or an accusative position, depending on the governing verb, cf. typical frames given in (13).

(12) $[_{CP}\ what_j \ldots V\ [_{SC}\ t_j\ XP_{PRED}\ ] \ldots\ ]$

(13) a. *trace of <u>what</u> (DP*)=Acc*

... V [$_{SC}$ DP* to be XP]	(V = consider, take, *etc*)
... V [$_{SC}$ DP* as XP]	(V = describe, regard, *etc.*)
... V [$_{SC}$ DP* XP]	(V = call, *etc.*)

b. *trace of <u>what</u> (DP*) =Nom*

[$_{IP}$ DP* .. V [$_{SC}$ t_{DP} to be XP]]	(V = seem, be considered, *etc.*)
[$_{IP}$ DP* .. V [$_{SC}$ t_{DP} as XP]]	(V = be described, *etc.*)
[$_{IP}$ DP* .. V [$_{SC}$ t_{DP} XP]]	(V = be, be called, *etc*)

All Transparent Free Relatives have this structure, but not all free relatives that have this structure are necessarily transparent, as we will see.

As noted, TFRs can function as arguments, predicates or attributes. When they appear in argument position, they appear to be ordinary referential DPs, like ordinary free relatives. But they differ with regard to the properties just reviewed, and more besides. (14) lists six important differences:

(14) a. *Ordinary FRs*
i) definite/universal reading only
ii) barred from 'indefinites-only' position
iii) singular agreement only with bare *what*
iv) [–human] only with bare *what*
v) wh-phrase can also be *whatever* (N), *who(ever)* etc.
vi) strong island for extraction

b. *Transparent FRs*
i) weak indefinite reading also possible
ii) can appear in 'indefinites-only' position
iii) plural agreement possible with bare *what*
iv) [+human] possible with bare *what*
v) wh-phrase can only be bare *what*
vi) no island effect w.r.t. extraction from XP_{PRED}

In contrast to ordinary free relatives, TFRs can have indefinite or weak existential interpretation, cf. (15a) (from McCawley 1988:733); and can also stand in the indefinites-only position (15b):

(15) a. [what could best be described as pebbles] were strewn across the lawn.
b. there were [what could be best described as pebbles] strewn across the lawn.

This case is a first illustration of the paradoxical properties of TFRs. The XP in the small clause clearly acts as a predicate within the FR. However, the FR is 'transparent' in the sense that XP simultaneously determines properties of the whole free relative. Thus, in (15), the FR seems to inherit indefiniteness from the XP predicate, which is an indefinite DP (*pebbles*).

This transparency is both syntactic and semantic. The predicate XP seems to form the semantic head of the TFR consituent; while the remainder of the FR functions as a modifier, cf. the paraphrase in (16):

(16) a. there is [what appears to be an error] in this program.
b. there is [an apparent error] in this program.

Syntactically, also, the predicate XP shows all signs of being the head of the construction. Most strikingly, it is *the category of XP* that determines the distributional possibilities for a TFR. If the predicate XP is adjectival, the TFR must be in an AP-position (17); and if the predicate is a DP, the TFR must be in a DP-position (18) (note that while copular sentences accepts DPs or APs in predicate position, subject positions accept DPs but not APs and prenominal attributes inside DP can be AP but not DP):

(17) a. John is [what you might call stupid] *predicate*
b. * [what you might call stupid] just walked in *subject*
c. a [what I'd describe as stupid] decision *attribute*

(18) a. John is [what you might call a fool] *predicate*
b. [what you might call a fool] just walked in *subject*
c. * a [what I'd describe as a failure] decision *attribute*

Where the predicate XP is a DP, it also determines other properties of the FR, such as definiteness and number. If the predicate is definite (19b), the whole TFR takes on a definite reading, and can no longer appear in the *there*-sentence:

(19) a. there is [what appears to be [a virus]] in this program
b. * there is [what appears to be [the virus]] in this program

If the predicate is plural, the TFR triggers plural agreement (20) (cf. also (15)); and if the predicate is [+human] (21), the FR takes a human referent:

(20) [what seem/*seems to be [tourists]] are/*is lying on the lawn.

(21) she invited [what I took to be [a policeman]]

Recall that ordinary FRs headed by bare *what* do not trigger plural agreement even if denoting a semantically plural entity; nor do they permit human referents. However, in wh-questions (22), we see plural agreement with *what*, though only in (22a), i.e. in precisely the TFR configuration (12). This can be related to facts (23) showing that a plural DP predicate as in (22a) is incompatible with a singular subject. So arguably, the plural in (20) does not show that the predicate DP directly determines the number features of the FR; as the transmission may be mediated by wh-movement of *what*:

(22) a. what seem to be *t* the worst problems? (*seems)
b. * what seem to be *t* on the table? (*ok:* seems)

(23) a. * this seems to be [*t* the worst problems] (*ok:* these seem...)
b. I consider [these (*this) terrible scissors]

A similar line might be attempted with [+human]—it could be that *what* may inherit [+human] from its DP predicate and transmit it via wh-movement to the whole FR. However, in wh-questions, even those with the TFR-configuration (12), *what* seems far less compatible with human reference:

(24) a. ? what did you take to be a policeman?
b. * what do you consider to be your best friend?

TFRs are not only transparent with respect to category and other features, they are also transparent with respect to extraction. Ordinary FRs form strong islands, like complex NPs (expected if FRs are in fact DPs):

(25) a. * the student that Mary invited [who(ever) likes t]
b. * something that Mary invited [whoever is angry about t]

Now consider (26). As far as extraction out of the predicate XP is concerned, TFRs are not islands at all. The contrast between (26) and (25) is huge. In terms of grammaticality, the extractions in (26) exactly match those in (27), where there is no FR at all containing XP:

(26) a. ? the professor who I met [what you might call [a student of t]]
b. something that John is [what you might call [angry about t]]

(27) a. ? the professor who I met [a student of t]
b. something that John is [angry about t]

To summarize: with respect to a range of syntactic tests, a Transparent Free Relative seems to have no interaction with the matrix clause containing it. Rather, it is the XP constituent—apparently a predicate contained *inside* the TFR—that interacts directly with the matrix clause.

3. XP_{PRED} is the head of the TFR constituent

McCawley (1988:732-733) cites a proposal from Kajita (1977) to account for the special properties of what I am calling TFRs. This invokes a process of 'Reanalysis' which transforms the structure (28a), with the predicate XP contained within the FR, into (28b). XP becomes the head of the structure, the FR a kind of modifier or adjunct:

(28) a. $[_{FR} \ldots . XP_{PRED}]$ → b. $[_{XP} [_{FR} \ldots .] XP_{PRED}]$

(29) a. John bought $[_{FR}$ what he took to be $[_{DP}$ a guitar]]
b. John bought $[_{DP} [_{FR}$ what he took to be] a guitar]

This is intuitively correct. (29) is ambiguous. In one reading, associated with the ordinary Free Relative structure (29a), the object of *bought* is a definite: 'the thing that he thought was a guitar'. In the second reading, the object of *bought* is indefinite: 'a guitar (or so he thought)'. In this reading the Free Relative is transparent; it merely modifies the indefinite *a guitar* (as McCawley notes, this modification has a metalinguistic flavour—the FR 'hedges' the description in the NP).

Assuming that TFR's have a structure like (28b) offers an immediate solution to most of our problems. The reason why XP (and not the free relative) determines grammatical properties of the TFR constituent, is that XP is the head of that constituent. This goes for number agreement, human reference, definiteness, and for the syntactic category of the constituent. As for why the free relative does not interfere with extraction out of XP, the reason is simple—the free relative does not contain XP.

How does the structure (28b) arise? There can be no transformational rule of Reanalysis deriving (28b) from (28a)—such a rule would alter theta-relations, turning an argument (the Free relative) into a modifier, and turning a predicate (XP) into an argument. Hence, we must assume that (28a) and (28b) are two independently generable structures.

Looking more closely at the transparent structure (28b), it becomes apparent that the free relative is incomplete. The trace of *what* is an argument variable; it needs a theta-role. Yet there is no predicate in the relevant position to assign that theta-role. The missing predicate is of course XP. Thus, XP in the 'reanalyzed' structure is in fact a 'shared constituent'—it needs to be in two places simultaneously. Transparency dictates that XP is outside the FR; but XP must also be inside the FR where it acts as a predicate, theta-marking the trace of *what*.

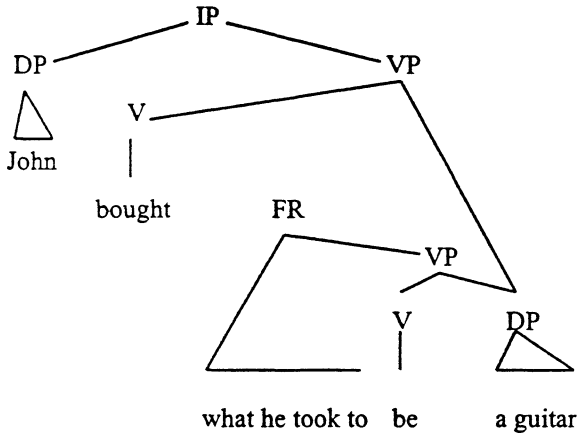
So we have reached three conclusions about TFRs: (i) XP heads the TFR constituent, as in (28b); (ii) the structure (28b) is not transformationally related to ordinary FRs; and (iii) XP is in some sense a 'shared constituent'. We now face two further questions about (28b):

(30) a. What is the relation of the FR to the host sentence?
b. What is the nature of constituent-sharing?

For (30a), I see two possible answers. Either the FR is an adjunct—i.e. is adjoined to XP in syntax; or the FR is some kind of parenthetical expression. There are grounds for assuming that the FR is a parenthetical, which I take to mean that it is syntactically disconnected from the host sentence, and that it gets inserted into the host sentence only in the PF-component (this is only tentative—other approaches to parentheticals are conceivable). In section 5, it is argued that TFRs have more in common with parenthetical expressions than with classical adjunct modifiers.

With respect to constituent sharing (30b), there are also two possible answers. In one view, sketched in (31), XP is literally simultaneously the daughter of two VP nodes, the VP in the FR and the VP of the matrix clause. This approach requires a theory of phrase structure which gives up the unique mother condition, to permit multiple dominance (cf. Moltmann 1992 for such an approach to constituent sharing in coordination):

(31)



The alternative, preserving standard assumptions about phrase structure, is to assume an ellipsis approach: there are two copies of XP, one in the FR and one in the matrix, one which surfaces as an empty category, giving one of the two options in (32):

(32) a. John bought [$_{FR}$ what he took to be [$_{DP}$ a guitar]] [$_{DP*}$ ∅]]
b. John bought [$_{FR}$ what he took to be [$_{DP}$ ∅]] [$_{DP*}$ a guitar]

Here, I will adopt the ellipsis approach. In particular, I will argue for (32b)—the deleted copy of XP is the copy inside the TFR. There is no known ellipsis rule that could give us (32a); but there is an ellipsis rule that could generate (32b). This is Backward Deletion, also involved in so-called Right Node Raising constructions (see Wilder 1997).

Combining these two answers, my proposal is summarized in (33). In syntax, only XP is present in the matrix clause, where it interacts directly with the matrix with respect to argument/predicate status, category, definiteness, agreement, and extraction. Deletion takes place in the PF-component, following parenthetical placement (only then is the input configuration for Backward Deletion created).

(33) a. *Syntax: independent phrase markers*
[he bought [$_{DP}$ a guitar]] [what he took to be [$_{DP}$ a guitar]]

b. *Phonology: parenthetical placement and deletion*
John bought < what he took to be ~~a guitar~~ > a guitar

Two additional stipulations are needed to ensure correct placement and to guarantee that deletion takes place. If either of the conditions (34) is not met, the construction simply fails. (34a) excludes cases like (35a)—the FR cannot be placed farther left from the matrix XP, though there is no reason why Backward Deletion

should not apply in such cases. (34b) is needed to exclude (35b)—if there is no deletion in the FR, we get gibberish:

(34) a. the TFR must be left-adjacent to XP in the host sentence
b. XP in the TFR must be deleted

(35) a. * <what he took to be ~~a guitar~~> John bought a guitar
b. * John bought <what he took to be a guitar> a banjo

4. Evidence for Backward Deletion

This section gives two arguments to support the Backward Deletion approach. One concerns identity, the second concerns word order.

4.1 Identity

We have already seen that deleted and overt XPs can fulfill different syntactic functions—the deleted XP is always a predicate in a small clause; the overt XP can be an argument, a predicate or an attributive adjective. If there really is phonological deletion in TFRs, we might expect that the deleted constituent and its overt antecedent would need to be identical phonologically, but not necessarily morphosyntactically. Evidence for this is provided by the contrast between (36a) and (36b). In the frame *call YP XP*, cf. (37), the predicate XP can be nominal or adjectival but not verbal. This takes case of (36b). In (36a), though, the verbal form *snoring* is able to license deletion of the homophonous nominal gerund in the FR, as in (38):

(36) a. ? John is what I'd call snoring
b. * John what I'd call snores

(37) I'd call that [$_{AP}$ boring] / [$_{NP}$ snoring] / * [$_{VP}$ snores]

(38) John is < what I'd call [$_{NP}$ ~~snoring~~] > [$_{VP}$ snoring]

4.2 Word order: placement of the overt copy of XP

The second argument for Backward Deletion concerns word order. The shared constituent of TFRs underlies the restriction (39): it must be positioned in the surface string so as to stand at the right edge of the Free relative. In other words, the shared constituent cannot appear properly contained within the FR. If we assume Backward Deletion, this is exactly what we expect—the spelled-out copy must be outside and to the right of the FR. Add to this the assumption about placement (34a), and (39) follows.

(39) The 'shared XP' must appear at the right edge of the FR

The data in (40)-(42) illustrate this condition. Recall that TFRs in DP position can be ambiguous between an indefinite transparent free relative and a definite ordinary free relative (40a). If (39) is not met, as in (40b), the transparent indefinite reading disappears. The same goes for TFRs in predicate position (41). (41a) is ambiguous between a 'hedged AP' reading and a 'definite DP' reading; (41b) loses the 'AP' reading. In prenominal modifier position (42), only the transparent structure is available, and the structure fails if the AP is not at the right edge of the free relative.

(40) a. John bought [what I described as a guitar *ambiguous*
b. John bought [what I described as a guitar to him] **TFR*

(41) a. This was [what I described as stupid *ambiguous*
b. This was [what I described as stupid to John] **TFR*

(42) a. a [what I described to John as stupid decision *TFR only*
b. * a [what I described as stupid to John] decision

4.3 The 'right edge' condition on the deletion target

There is a further fact that supports the generalization of constituent-sharing in TFRs to right node raising in coordination. Example (43a) is excluded because the *to*-PP cannot intervene between *as* and its adjective, cf. (43b). However, this account depends on an additional assumption, viz. that the AP-gap in the FR must be at the

right edge of the FR. (43a) could have had another derivation (43c), based on the word order in (41b), with the deleted adjective preceding the PP:

(43) a. * a <what I described as to John ~~stupid~~> stupid decision
b. * I described this as to John stupid
c. (*) this is a <what I described as ~~stupid~~ to John> stupid decision

We can rule out (43c) out by appealing to the condition (44), which holds of Backward Deletion generally (cf. Oehrle 1991, Wilder 1997). The deletion site must be right-peripheral in the TFR (the domain referred to in (47); in coordinations, this corresponds to the conjunct):

(44) A Backward Deletion target is at the right edge of its domain.

With respect to 'Right Node Raising', (44) accounts for contrasts like (45). In (45a), the deleted NP can be at the right edge of its conjunct, if it undergoes Heavy NP-shift. In (45b), the deleted NP is the goal object of a double construction. Such NPs cannot undergo Heavy NP-shift—cf. (45d), hence there is no way for the deleted NP in (45b) to be at the right edge of its conjunct.

(45) a. Sue gave _ to Bill ~~that old diary of mine~~ and Mary will read that old diary of mine
b. * Sue gave _ roses ~~the boy next door~~ and Mary visited the boy next door

c. Sue gave _ to Bill [that old diary of mine] *ok HNPS*
d. * Sue gave _ roses [the boy next door] * *HNPS*

4.4 OV-languages

These facts about TFRs seem to hold cross-linguistically as well. We predict that a language can only have a TFR modifying a prenominal adjective if the word order rules of that language allow an adjectival predicate to stand at the right edge of the free relative, that is, in postverbal position.

German is an OV language that does not allow predicative APs to follow the verb in free relatives (46); and German does not have TFRs (47). In Dutch, another OV language, predicative APs can follow the verb in free relatives (48)—and Dutch does have TFRs (49) (Dutch data from Marcel den Dikken, p.c.):

(46) a. Dies ist [was ich als dumm bezeichnen würde]
this is what I as stupid describe would

b. * Dies ist [was ich bezeichnen würde als dumm]

(47) a. * eine [was ich als dumm bezeichnen würde] Entscheidung
a what I as stupid describe would decision

b. * eine [was ich bezeichnen würde als] dumm-e Entscheidung
a what I describe would as stupid-AGR decision

(48) Dit is [wat ik beschouw als tamelijk stomm]
this is what I regard as fairly stupid

(49) een <wat ik beschouw als > tamelijk stomm-e beslissing
a what I regard as fairly stupid-AGR decision

5. TFRs as parentheticals

Turning now to the claim that TFRs are parentheticals and not standard adjuncts, it is a quite general fact about English that finite clauses are not tolerated inside premodifiers of adjectives, cf. (50a). If TFRs were adjuncts, then in prenominal position they would have to be analysed as pre-modifiers of the prenominal adjective, a blatant counterexample to the generalization. On the other hand, sentence parentheticals can pre-modify adjectives (50b):

(50) a. * an [$_{AP}$ [as clearly as mine is] stupid] decision
b. This is a, [she thinks], stupid decision

Sentence parentheticals and TFRs also share properties of intonation and information structure. In (50b), the host sentence is foregrounded, the parenthetical backgrounded. In a TFR, the shared constituent in the matrix is foregrounded, the free relative (minus the shared XP) is backgrounded.

Ordinary sentence parentheticals do not have the 'constituent sharing' property of TFRs, but there is another type of parenthetical which does. This is the *Sluice Parenthetical*, discussed by Lakoff (1974) (cf. also McCawley 1988:739). (51) involves a sentence parenthetical containing a sluiced interrogative complement (*Sluicing*=IP-ellipsis), which serves to meta-linguistically 'modify' the matrix object, much like TFRs do.

(51) John invited <you'll never guess what kind of> people to his party

Sluice parentheticals involve constituent sharing at the right edge of the parenthesis—the noun of the wh-phrase is simultaneously the (bare indefinite mass or plural DP) object of the matrix clause. This is shown by the fact that neither clause of (51) is complete without the noun *people*:

(52) a. John invited people to his party
b. * John invited to his party
c. You'll never guess what kind of people [$_{IP}$ ∅]
d. * You'll never guess what kind of

The analysis developed for TFRs can be applied directly to Sluice Parentheticals—parenthetical placement followed by Backward Deletion:

(53) John invited <you'll never guess what kind of ~~people~~> people to his party

In German, word order rules are such that the wh-phrase in a sluice ends up at the right edge of its clause. This means that we expect Sluice Parentheticals (unlike TFRs) to be possible in German, as indeed they are:

(54) Hans hat <du kannst dir nicht vorstellen, was für ~~Leute~~> Leute eingeladen
H. has you can REFL not imagine what-sort-of people invited

Notice also that we have to make the same two stipulations (55) for Sluice Parentheticals as we did for TFRs, to guarantee that the parenthetical is placed correctly and that deletion takes place, excluding examples like (56):

(55) a. the Sluice-SP must be left-adjacent to XP in the host sentence
b. XP in the Sluice-SP must be deleted

(56) a. * <you'll never guess what kind of ~~people~~> John invited [people] to his party
b. * John invited <you'll never guess what kind of people> [idiots] to his party

These similarities between Sluice Parentheticals and TFRs underscore the claim made here that TFRs are a species of parenthetical expression.

6. TFRs and Pseudoclefts

One difference between ordinary FRs and TFRs still to be addressed (cf. (14) above) concerns the "*what*-only" restriction—TFRs can only be formed with bare *what*, cf. (57)-(58). Interestingly, this is also a property of specificational pseudoclefts (SPCs) (cf. Iatridou and Varlokosta 1996). To conclude, I comment briefly on the relation between the two constructions.

The *what*-only restriction has two subcases. First, *whatever* is not possible (57). Secondly, it concerns the choice between *what* and *who* in FRs with [+human] predicate DPs; *who* is not possible in (58).

(57) a. John is what/*whatever I'd call angry *TFR*
b. I'd call what/*whatever John is angry *SPC*

(58) a. John is what/*who (I thought) was a policeman *TFR*
b. what/*who John is is a policeman *SPC*

The SPCs in (57)-(58) are like the sentences containing TFRs, only turned inside out, as it were. The predication relation *inside* the TFR, between the trace of *what* and *angry* in (59a), is the same as the *external* predication in the SPC (59b), between the Free Relative and *angry*:

(59) a. John is < what I'd call [$_{SC}$ *t* ~~angry~~] > angry *TFR*

b. I'd call [$_{SC}$ what John is angry] *SPC*

This suggests that the *what*-only restriction may reflect a common property holding of the internal predication (the small clause) inside TFRs and of the external predication between the FR and its associate in SPCs.

Suppose that the predications marked in (59) are underlyingly predications involving bare *that* as its subject, as in (60).

(60) a. I'd call [that angry] *TFR*

b. I'd call that (John is that) angry *SPC*

The *what*-only restriction follows on the reasonable assumption that bare *what* is the only wh-pronoun that can realize *that*.

If this is on the right track, then TFRs and pseudoclefts should have other properties in common with predications having bare *that* as their subject (cf. Higgins 1979:ch.5 for relevant discussion of copular sentences with *that* as subject). There is another restriction that holds of all three cases, illustrated in (61) to (63)—none of them works with *remain* or *become*:

(61) * what John is remains / has become angry *SPC*

(62) * John is < what remains / has become ~~angry~~ > angry *TFR*

(63) (Did you hear him shouting?) *that-predication*

a. that was (what you'd call) angry

b. * that remains / has become (what you'd call) angry.

The correlation with predications having bare *that* as their subject may prove important in understanding why TFRs can only be formed from free relatives having the format (12). Also suggestive is the fact that the contrast in (64) between ordinary FRs headed by *what* and TFRs with respect to [+human] also correlates with the compatibility of *that* in (65a) but not (65b) with [+human] denotation.

(64) a. <What I'd call ~~a policeman~~> a policeman just walked in.

b. I invited [who / #what you met last night]

(65) a. That's a policeman / I'd call that a policeman

b. I met him / #that last night.

Of course, the ideas sketched in this section need careful working out, but that's a topic for another paper.

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