A unified theory of ‘standard’ and ‘transparent’ free relatives

A B S T R A C T

This paper puts forward a unified theory of ‘standard’ and ‘transparent’ free relatives, and thus departs from earlier analyses of the latter, which have consistently viewed them as radically different ‘constructions.’ It is argued, partly on the basis of strengthened and refined old arguments and partly on the basis of novel ones, that the two kinds of free relatives are unified by the following core of properties: (i) they are complex XPs, consisting of an overt CP and a null head (with internal structure), (ii) they are multi-categorial, and (iii) their semantic interpretation involves the application of a uniqueness operator to a set obtained by abstraction.

The special effects associated with transparent free relatives result from the following combination of factors (which may be encountered separately, in which case they do not induce transparency effects): (a) the wh-element in [Spec, CP] binds the subject of a small clause, (b) the small clause is of the equative-specificational type, (c) abstraction at the CP level applies to an unrestricted property variable, and (d) the wh-element is syntactically and semantically underspecified. The cumulative effect of these factors is that the small-clause predicate is perceived as, and in certain ways also functions as, a syntactic and semantic ‘nucleus’ of the complex XP, and thus exhibits head-like properties.

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1. Introduction

The central goal of this paper is to argue that a number of free relative constructions, for which distinct analyses have been proposed in past literature, are optimally analyzed as exhibiting the following two unifying properties: (i) they are complex XPs consisting of an overt CP and a null 'external head', possibly with internal structure, and (ii) their semantics involves the application, at the CP level, of a uniqueness operator to a set obtained by abstraction. The constructions that I propose to subsume under this umbrella are: (I) nominal 'standard' free relatives, such as (1a) and comparable constructions in other languages; (II) non-nominal constructions like (1b-d), which some linguists have analyzed as adjectival, adverbial and prepositional standard free relatives (e.g., Bresnan & Grimshaw 1978), while others have proposed quite different analyses (e.g., Larson 1987, 1998); (III) 'transparent' free relatives, such as (2) and comparable constructions in other languages, for which all earlier workers who addressed them proposed analyses radically different from those that had ever, to my knowledge, been envisaged for SFRs, and in particular, from those with the properties (i)-(ii).

(1) a. I'll sing [{**what, whichever songs, however silly a song**} you want me to sing].

b. I'll sing [**however erect** you want me to sing].

c. I'll sing [**however carefully** you want me to sing].

d. I'll sing [**in whatever town** you want me to sing].

(2) a. He made [what may appear to be **a radically new proposal**] (but is in fact a notational variant of earlier analyses).

b. He made an uninspired and [what I'd describe as **catastrophic**] decision.

c. He came out the next day, but I didn't get a chance to talk to him

* I am grateful to Meggi Azarias, Lisa Cheng, Marc-Ariel Friedemann, Julia Horvath, Richard Kayne, Chris Kennedy, Manfred Krifka, Lucien Kupfermann, Fred Landman, Dimitri Levinson, Barbara Partee, Georges Rebuschi, Susan Rothstein, Aldo Sevi, Helen Trugman, Soyoung Yun-Roger, and Thomas Ede Zimmermann for valuable discussion of, and illuminating comments on various aspects of this paper. I am also deeply indebted to Marcel den Dikken and the three anonymous *NLLT* reviewers for insightful and helpful comments that led to substantive improvements. I would also like to thank audiences at the 25th and 26th Incontro di Grammatica Generativa, Rome (2000) and Trieste (2001) respectively, the Conference on the Structure of DPs/NPs 25, Antwerp (2000), the Tel Aviv Workshop on the Syntax-Semantics of relatives (2000), the ACME Balcanica Conference (Montreal 2001), and the Zentrum für Allgemeine Sprachwissenschaft, Berlin (1999 and 2002), where earlier versions of sections of this paper were presented. None of these persons are in any way responsible for the use I have made of their ideas and suggestions, and all remaining faults are strictly my own.

This paper is based on research supported by the Israel Science Foundation of the Israel Academy of Sciences under grants 782/00-01 and 800/01-02. A shorter and substantively different earlier version that addresses only some of the issues discussed in this article will appear in the proceedings of the Antwerp conference.

[what you might call **privately**].

d. He felt my mother was [what he called **poisoning my mind**].

The fact that data like (1) and like (2) have been consistently analyzed in radically different ways may well be due to the fact that these constructions do differ impressionistically: In (1), the intuitively felt 'nucleus' is the wh-phrase, in (2), it is the boldfaced phrase predicated of the trace of *what.* Nonetheless, I will argue that this impressionistic distinction is misleading, and that transparent free relatives (henceforth: TFRs) are nothing but a special case of standard free relatives (henceforth: SFRs), their transparency properties being attributable to a combination of internal syntactic and semantic properties that are also attested separately from each other (in which case they do not induce transparency effects).

The unified analysis I am proposing does **not** purport to apply to each and every construction that has been called 'free relative' at one time or another. In particular, I am not proposing it with respect to concessive constructions like the bracketed ones in (3), which superficially resemble the wh+*ever* SFRs in (1), and which I regard as 'bare' CPs; for argumentation in support of this view, see Izvorski (2000) and Grosu (ms.)[1]. Neither am I proposing the unified analysis with respect to modal existential wh-constructions like the bracketed one in (4), which were extensively argued in

[1] I know of at least three properties that concessive constructions share with interrogatives (which I take to be uncontroversial bare CPs), but not with SFRs or TFRs, and which point to the conclusion that concessives are best analyzed as bare CPs, just like interrogatives.

First, while the distribution of SFRs and TFRs in larger contexts seems to basically coincide with the distribution of simplex phrases with the content, logical type, syntactic category and phi-features of their 'nucleus', i.e., of the phrases boldfaced in (1)-(2) (note that SFRs and TFRs are not freely interchangeable among subcases), the distribution of interrogatives and concessives seems to be unaffected by the nature of the wh-phrase. Thus, the interrogatives in (i) are all direct objects of the matrix verb, and the concessives in (3) are all adverbials.

(i) a. I wonder [**which books** she sold].
b. I wonder [**how smart** she is].
c. I wonder [**how carefully** she writes].
d. I wonder [**in which town** she lives].

Second, concessives, but not SFRs or TFRs, allow multiple wh-phrases, just like interrogatives. For illustrations, see Izvorski (2000) and Grosu (ms.).

Third, anticipating a point made in section 2, SFRs and TFRs – and more generally relative constructions in which either the external head or the phrase in [Spec, CP], but not both, is null – are subject to restrictions on mismatches between requirements of the matrix and of the subordinate clause that concern affixal Case and/or Ps. No such restrictions are operative in interrogatives (demonstration omitted), or in concessives, as brought out by the contrast between the concessive construction in (iia) and the SFR construction in (iib) (the latter purports to convey the import of (iic)).

(ii) a. [**In whatever way** you forge your report], you won't be able to avoid detection.
b.*I intend to imitate [**in whatever way** you forged your report].
c. In intend to imitate the way, whatever it is, in which you forged your report.

Note that in both (iia) and (iib), the preposition *in* is required by the subordinate clause, but not by the matrix, and also that this state of affairs induces unacceptability in (iib), but not in (iia).

Grosu (1989, 1994, ms.), Grosu & Landman (1998) and Izvorski (1998) to possess bare CP status and to lack property (ii), the output of abstraction serving as input to existential quantification[2].

(3) a. [**Whichever books** you may sell], I refuse to buy from you.

b. [**However smart** you may be], I will never hire you.

c. [**However carefully** you may word your request], I will still turn it down.

d. [**In whatever town** she now lives], I will never visit her.

(4) Je n'ai pas [**à qui** donner 50 francs]. **← French**

I Neg have not to whom to-give 50 francs

'I have no one to whom to give 50 francs.'

For completeness, I note the (presumably uncontroversial) fact that (i) and (ii) also occur independently of each other, at least in part. In particular, (ii) is found in quite a few distinct syntactic constructions (see Grosu & Landman 1998 and references therein), and, as we shall see in section 5.7., in 'light-headed' analogs of both SFRs and TFRs. I do not at the moment know of languages in which (i) occurs without (ii).

The remainder of this paper consists of two main parts, which are devoted to SFRs and TFRs respectively. An important function of Part One, which is also of interest in its own right, is to provide a strengthened foundation for Part Two. It consists of sections 2 and 3, in which I refine a number of arguments put forward in earlier literature (in particular, in Groos & van Riemsdijk 1981 and in Grosu 1996) in support of the theses that SFRs are null-headed, rather than wh-headed (section 2), and that they can exhibit the entire range of categorial diversity that was proposed in Bresnan & Grimshaw (1978) (section 3). A point that is especially relevant to Part Two (made in section 3.1.), is that SFRs can designate properties, and can moreover be underspecified both categorially and logico-typically. Section 3.2. (in conjunction with an appendix) offers novel support for the view that SFRs can also be prepositional, thus continuing a controversy that has opposed Grosu (1996) to Larson (1987, 1998). While this section is not only important in its own right, but also potentially relevant to Part Two, since prepositional TFRs cannot be excluded in principle, no such constructions appear in Part Two, and those with a primary interest in the analysis of TFRs may skip section 3.2., as well as the appendix.

[2] Arguments for bare CP status comparable to those indicated in footnote 1 can be found in the works just cited in the text. Grosu (ms.) argues – *contra* Grosu & Landman (1998) and Izvorski (1998) – that the trigger for existential quantification must be internal to the subordinate clause, rather than provided by the matrix.

Part Two consists of sections 4 – 9, and deals with the following issues: In section 4, I present background information on TFRs, in particular, the gist of the four earlier analyses of TFRs known to me, and the transparency properties attributed to them in past literature. The latter are submitted to a critical examination, which results in a separation of genuine transparency properties from spurious ones. In section 5, I argue that the optimal configurational analysis of TFRs assigns to them exactly the configurational properties of SFRs, in particular, a null CP-external head and a wh-phrase in [Spec, CP]. To this end, I offer seven arguments against the analyses presented in section 4, three of which rely on a reconsideration of data that were advanced by proponents of these analyses **in support** of them. In section 6, I outline the kind of semantics that I envisage for TFRs, paying special attention to the uniqueness requirement (property (ii) above). I argue that the semantics of TFRs involves an equative-specificational relation between properties, as well as the application of a uniqueness operator to a set of properties. In section 7, I show how the configurational properties argued for in section 5, the semantics proposed in section 6, and the syntactic and semantic underspecification of (certain) wh-elements and null CP-external heads jointly yield an account of all the genuine transparency properties put forward in section 4; this account is also extended to certain 'light-headed' transparent relatives that exhibit an overt CP-external head and a null operator in [Spec, CP]. In section 8, I discuss data from a number of languages that exhibit SFRs, but not TFRs. I argue that in a number of languages I investigated, this state of affairs is traceable to lexical properties of items in [Spec, CP] or in CP-external head position. Section 9 is a summary of results.

P A R T O N E

2. The null-headed vs. the wh-headed analysis of SFRs

In footnote 1, I alluded to a property of relative clauses that can be descriptively formulated as follows:

(5) Relative clause constructions whose head or [Spec, CP], but not both, is null, restrict mismatches in Kase between the overt and the null phrase to varying language-specific extents. 'Kase' is a term borrowed from Grosu (1994); it designates the union class of affixal morphological Case and P, and will play an important part in section 3. Illustrations of the fact that the Kase of an

SFR's wh-phrase may be restricted under conflicting Kase assignments by the matrix and the relative has been abundantly illustrated in both the philological and the generative literature (concerning the latter, see, for example, Grosu 1994, Vogel 2001, and references therein). The fact that the Kase of a TFR's wh-phrase may be restricted under comparable conditions has not, to my knowledge, been noted or shown in earlier literature, but will be demonstrated in section 5.4. Illustrations of the fact that the affixal Case of an (uncontroversial) external head can be restricted by the unrealized Case of the Null Operator in [Spec, CP] are found in Bayer (1984); an illustration of a comparable state of affairs that concerns P-Kase will be provided in section 3.2.

The principal argument advanced in Bresnan & Grimshaw in support of a wh-headed analysis of SFRs relied on languages which, like Modern English and Modern French, have the strongest possible restriction of the kind in (5), namely, a strict matching requirement between the Kases required by the matrix and the relative (up to morphological indistinctness). Their basic assumption was that a wh-headed analysis **predicts** such matching requirements **all by itself**, and that a null-headed analysis does not. However, this claim is incorrect, because some constructions with incontrovertible overt heads and a null [Spec, CP] restrict mismatches in Case, but without requiring strict matching; an illustration from Bavarian German, due to Bayer (op. cit.), is provided below. Note that the [Spec, CP] may be null when the relative requires Nom Case, and the matrix, Dat Case, but not conversely.

(6) a. I sog's **dem** **Mo**, (*der*) wo[3] im Gartn arwat.
I said it the.Dat man who.Nom C in-the garden works
'I said it to the man who works in the garden.'

b. **Des** **Kind**, *(*dem*) wo mir an Apfe schenka …
the.Nom child who.Dat C we an apple gave
'The child to whom we gave an apple…'

Furthermore, quite apart from data like (6), SFRs are by no means strictly matching in all languages, so that even under a wh-headed analysis, additional mechanisms need to be assumed to achieve observational adequacy, which means that such an analysis does only a limited amount of 'work.' And since cross-linguistic variation with respect to restrictions on Kase is typically

[3] *Wo,* which is the counterpart of interrogative and relative *where* in Standard German, also functions as a complementizer in Bavarian and other Southern German dialects, and may co-occur with a relative pronoun, as in the full versions of (6a-b).

describable in terms of a hierarchy of Kase 'obliqueness' (Harbert 1983), it is perfectly possible to bring strict matching under the umbrella of such an account by viewing it as the limiting situation (Grosu 1994). If so, different kinds of facts need to be considered in order to decide between a wh-headed and a null-headed analysis. In the remainder of section 2, I examine three kinds of facts that were marshaled in support of the null-headed analysis in past literature, sharpening and strengthening the argumentation, where necessary.

2.1. A Pied-Piping argument

Unlike restrictive relatives, SFRs allow wh-phrases of arbitrary complexity, so long as the entire phrase contributes to determining the nature of the designatum of the SFR, as illustrated in (7). At the same time, Pied-Piping of material that does not affect the nature of that designatum, and is thus interpreted in a lower position, is severely restricted. In fact, Grosu (1989, 1994) proposed that such Pied-Piping is excluded in general (except when it concerns affixal or prepositional Kase), citing data like (8), where the pied-piped material appears in italics.

(7) a. John will buy [{**whichever books, however many books, however expensive a book**}
you ask him to buy.

b. I will forge [**whoever's signature** you are willing to forge].

(8) a.*I intend to fire [**whose** *portrait* is hanging on that wall].

b.*John will fire [*the signature of* **whichever individual** you forge].

c.*We will hire [*a manuscript by* **whichever scholar** the MIT Press decides to publish].

However, Jacobson (1988, 1995) observed that data like (8a) become acceptable when the wh-element is of the *–ever* type, as shown in (9a).

(9) a. I will fire [**whoever's** *signature* appears on this list].

b.#I will fire [**anybody's** *signature* that appears on this list].

The reasons for the contrast between (8a) and (9a) need not concern us here. What matters is that data like (9a) are unproblematic for a null-headed analysis, which assumes movement of the wh-phrase to [Spec, CP], a step consistent with 'reconstruction' of the italicized element in the position of the trace. In contrast, such data are problematic for analyses that assign the wh-phrase to the external head position, since relatives with an incontrovertible overt external head do not allow a

comparable interpretation. This can be appreciated by comparing (9a) with (9b), which has only the absurd reading that a signature is to be fired.

For completeness, I note that data like (9a) are not an idiosyncratic feature of English, but are encountered in other languages as well. Müller (1999, p. 78) reproduces the following two examples from the German newspaper *taz.*

(10) a. [**Wessen** *Birne* noch halbwegs in der Fassung steckt], pflegt solcherlei

whose bulb still halfway in the socket sticks uses such

Erloschene zu meiden; …

extinct to avoid

'Whoever still has half of his wits tends to avoid such vacant characters; …'

b. [**Wessen** *Schuhe* danach besprenkelt sind], hat keinen Baum gefunden

whose shoes afterwards speckled are has no tree found

und war nicht zu einem Bogen in der Lage.

and was not to a bow in the position

'Whoever's shoes ended up bespattered was unable to find a tree and couldn't pee in an arc.'

2.2. The Nachfeld argument

Possibly the best known argument in support of the null-headed analysis is due to Groos & van Riemsdijk (1981), who pointed out that the so called 'Nachfeld' position in Dutch and German (i.e., the position immediately after an embedded verb), which tolerates extraposed CPs, but not DPs (whether simplex or complex), nonetheless allows nominal SFRs. They also pointed out that this state of affairs has a straightforward analysis under the null-headed approach, which is consistent with the assumption that the null head is in argument position and the overt CP is in extraposed position in the Nachfeld, but has no obvious analysis under the wh-headed analysis. For numerous illustrative data, the reader is referred to their article.

Larson (1998), who expresses a preference for the wh-headed analysis, questions the tenability of the Groos & van Riemsdijk argument on the basis of an observation made by Hirschbühler & Rivero (1983, section 4.1). The latter two writers, while defending the null-headed analysis on different grounds, observed that DPs can sometimes follow the embedded verb, and offered the

Dutch example in (11) (their (20)). They further attributed the acceptability of (11) to the fact that the bracketed DP is quantified, but in point of fact the embedded verb can also be followed by referential DPs, in both Dutch and German, as shown in (12)-(13) respectively (I owe these data to H. van Riemsdijk, p.c.).

(11) Jan is verbaasd dat ik voor dit feestje uitgenodigd heb
*Jan is surprised that I for this small party invited hav*e
[al diegenen die mij met dit werk geholpen hebben]
all those who me with this work helped have
'Jan is surprised that I invited to this small party all those who helped me with this work.'

(12) Heden hebben wij na lange en moedig gedragen ziekte verloren
today have we after long and courageously borne sickness lost
[onze lieve vrouw, moeder en grootmoeder Petronella Clasina Staind]
our dear wife mother and grandmother Petronella Clasina Staind
'We lost today, after a long and courageously borne protracted sickness, our dear wife, mother and grandmother P.C.S.'

(13) Der Hans will der Maria zurückgeben *dieses Buch, diese Platte und diese Kleider*.
the Hans wants the.Dat Maria return this book this record and these clothes
'Hans wants to return to Maria this book, this record and these clothes.'

(14) I wish to give you (the following): *books, records, and other things.*

However, DPs like the italicized ones in (11)-(13) seem to be possible only in utterance-final position, and only if they are separated from the preceding material by an intonational break analogous to the one that follows the colon in (14), suggesting that they constitute separate (elliptical) utterances. When this interfering factor is controlled for, as in (15b), DPs in the Nachfeld are severely deviant. What we need to consider then are paradigms like (15), which provide a strengthened empirical basis for Groos & van Riemsdijk's argument (I owe the idea of constructing such paradigms to Fred Landman, p.c.).

(15) a. [*(All) das Geld* zurückgeben*, das du mir geschenkt hast*], werde ich nie.
all the money return which you me given have will I never

b.*[Zurückgeben *(all) das Geld, das du mir geschenkt hast*], werde ich nie.

return all the money which you me given have will I never

c. [Zurückgeben, *was du mir geschenkt hast*], werde ich nie.

return what you me given have will I never

'I will never give you back {(all) the money that, what} you gave me.'

2.3. The Contraction argument

In Grosu (1996), I offered an argument for the null-headed analysis that relied on a contraction process which is productive in contemporary Dutch and German, and survives in English relics like *thereon* and *whereon.* The data on which the argument was based are reproduced below.

(16) a. Er hat sich immer nur {mit dem, DAmit} beschäftigt (, was ihm von Nutzen sein konnte).

he has Refl always only with that therewith busied what him of use be could

'He has always been concerned only with that (which could be useful to him).'

b. Ich weiss nicht mehr, {gegen was, WOgegen} er sich geäussert hat

I know not more against what whereagainst he Refl uttered had

(, was dir am Herzen liegt).

what you.Sg.Dat at-the heart lies

'I no longer know what he expressed himself against (that is of decisive interest to you).'

(17) Die armen Hausfrauen stürzten sich {auf was, *worauf}

the poor housewives threw themselves on what whereon

sie nur kaufen konnten.

they only buy could

'The poor housewives pounced on whatever they could buy.'

The contraction process metathesizes and fuses a P with a neutral pronoun, and is always applicable when the pronoun is the complement of P; thus, the reduced contracted versions of (16) are fine for all speakers of Standard German[4], as far as I know. When the pronoun is the (incontrovertible) head of a complex DP, as in the full versions of (16), contraction is subject to dialectal and/or idiolectal variation: some speakers find it marginal and some allow it, especially with strong stress on the

[4] This is not necessarily true of all dialectal varieties. Josef Bayer (p.c.) informs me that (his variety of) Bavarian German allows contraction of Ps with *da,* but not with *was.*

pronominal subelement on the contracted form. However, when the pronoun is the initial element of an SFR that serves as complement of P, contraction seems to be completely impossible for everybody, as shown in (17).

In my (1996) article, I pointed out that *da/was* in the full versions of (16) on the one hand and *was* in (17) on the other are assigned identical syntactic functions and positions under the wh-headed analysis, i.e., they are all analyzed as lexical heads of a complex DP; the contrast in contraction options between (16) and (17) thus remains unaccounted for. Under the null-headed analysis, on the other hand, *da/was* in (16) are heads of a complex DP, while *was* in (17) occupies the Spec position of CP that is properly contained within a complex DP (as schematically indicated in (16')-(17') below), and I suggested that the contrast between the two sets of examples is attributable to this difference.

(16') $[_{DP}$ *das/was*$_D$ $[_{CP}$ …]]

(17') $[_{DP}$ *e* $[_{CP}$ *was* $[_{C'}$ …]]

Larson (1998) pointed out that I had failed to characterize the conditions under which contraction is allowed, and that its inability to operate in (17) is unexplained. I accept this criticism, and offer a characterization now. Thus, suppose we view the contraction process at issue as a variety of **incorporation** (in the sense of Baker 1988), comparable, say, to N-incorporation in Mohawk and other languages (see Baker 1988, 1996 and references therein). Baker proposed that this process applies to the lexical head of a verb's complement, regardless of whether the complement does or does not contain additional overt material. If we extend this proposal to Ps and their complements, we get a straightforward account of the difference between (16) and (17), since *da/was* is the lexical head of P's complement in (16), but not in (17). The only fact that requires additional explanation is the (potentially) degraded status of the contracted full versions of (16), since Mohawk-type N-incorporation that 'leaves behind' overt material in complement position is apparently fully acceptable, according to the literature. One possible reason for this may be that the remainder of the complement is a possible independent DP in its own right in the Mohawk relevant constructions, but not in (16).

This proposal just made receives some independent support from the behavior of *was* as the initial element of an **interrogative** complement of P. Such constructions are frowned upon by prescriptive grammars, which recommend the construction illustrated by (18a) instead, but many

speakers tolerate the uncontracted version of (18b), preferably with strong stress on the w-pronouns. In contrast, the contracted version of (18b) is totally out for everybody. Note that the contrast between the contracted full version of (16b) and the contracted version of (18) follows from the fact that the head of P's complement is *was* in (16b) and a null C, rather than *was,* in (18).

(18) a. Sprechen wir jetzt darüber, was wem zugestossen ist.
Speak we now thereabout what to-whom happened is
b. Sprechen wir jetzt {% über was, *worüber} wem zugestossen ist.
Speak we now about what whereabout to-whom happened is
'Let us now speak about what has happened to whom.'

2.4. Intermediate Stocktaking

In sections 2.1 – 2.3, I have offered reinforcement for three arguments that were put forward in earlier literature in support of a null-headed analysis and against a wh-headed analysis of nominal SFRs. I note that these arguments hold regardless of whether the wh-phrase is viewed as base-generated in the head position (as in Bresnan & Grimshaw 1978) or placed in the head position by movement out of CP (as suggested as a possible alternative analysis in Larson 1998). I also wish to note that the German facts in (15), (17) and (18b) also hold for speakers of German who require strict Kase-matching in SFRs, and that Modern English is a strict matching language; these states of affairs support the thesis, put forward at the beginning of section 2, that strict matching implies very little, if anything, about the CP-internal/external position of the wh-phrases of nominal SFRs.

The results of this section will serve as partial foundation for the thesis developed in Part Two of this paper, that is, for the view that TFRs are a syntactic-semantic variety of SFRs; in section 5, I offer a battery of arguments that TFRs are also optimally analyzable as null-headed complex XPs.

In the ensuing section, I extend the foundation for the thesis developed in Part Two by reinforcing earlier arguments that SFRs are multi-categorial, just as TFRs appear to be (see (2)).

3. Non-nominal SFRs

As noted in section 1, Bresnan & Grimshaw (1978) proposed that the bracketed constructions in (2) are headed by the boldfaced phrases, and thus that SFRs are multi-categorial (in particular,

nominal, adjectival, adverbial and prepositional). And while these authors did not explicitly make this point, their proposal also implies that SFRs may be of diverse logical types; for example, the bracketed structures in (1a) are analyzable as designating individuals (or sets of properties of individuals), and those in (1b-c), as designating properties. The multi-categorial and multi-typical thesis is orthogonal to the null/wh-headedness issue, and in Grosu (1996) I proposed to combine the former with the null-headedness hypothesis by assuming that structures like the bracketed ones in (1) are headed by null categories that agree in their categorical/typical properties with the corresponding boldfaced phrases. In arguing in favor of the multi-categorial view of SFRs, I also presented arguments against views expressed in Larson (1987) to the effect that SFRs are restricted to nominal categorial status, that constructions like (1b-c) are 'free comparatives', rather than free relatives, and that constructions like (1d) consist of a P and a nominal SFR complement of P, the 'missing' preposition being analyzable through an extension of the machinery put forward in May (1985) in relation to 'antecedent contained deletion' (ACD) of VPs.

The multi-categorial analysis of SFRs defended in Grosu (1996) was challenged in Larson (1998), primarily on conceptual grounds. Larson had little to say about the free relative/comparative status of constructions like (1b-c), and in fact admitted in a footnote he had no reply to an objection to the comparative analysis that I raised (see next section). The principal concern of his paper was with constructions like (1d), with respect to which he claimed that the analysis of Larson (1987) was conceptually superior to the one in Grosu (1996) on two counts: (i) it allegedly made use only of independently needed machinery, and thus qualified as the 'null hypothesis', in contrast to the analysis in Grosu (1996), which allegedly required appeal to additional machinery, and (ii) it made possible a straightforward semantics for the constructions at issue, something which was allegedly not the case for the analysis in Grosu (1996).

The remainder of this section is devoted to argumentation aimed at strengthening the case for a multi-categorial and multi-typical analysis of SFRs, with the ultimate goal of creating an improved basis for proposals to be developed in Part Two in relation to TFRs (see concluding remark of the preceding section). To this end, I will adduce novel evidence in support of the view that constructions like (1b-c) are relatives, not comparatives. Furthermore, I will show that property-designating SFRs may be categorially underspecified, a point that will turn out to be of crucial importance for the thesis that TFRs are a subinstance of SFRs. Next, I will argue that, contrary to

claims made in Larson (1998), the analysis proposed in Grosu (1996) in relation to data like (1d) requires no *ad-hoc* additional machinery, encounters no difficulties with respect to semantic interpretation, and in fact qualifies as the null hypothesis. Finally, I will argue that the analysis in Larson (1987, 1998) suffers from fundamental conceptual and empirical flaws, and thus does not qualify as a viable analysis, and certainly not as the null hypothesis. To the extent that this last conclusion is correct, any discussion of Larson's empirical arguments becomes an essentially academic matter. For the sake of completeness, however, I address in an appendix Larson's comments on, and objections to, the major empirical arguments put forward in Grosu (1996). In that appendix, I eliminate certain gaps in those arguments, and add one more argument.

3.1. Property-designating adjectival and adverbial SFRs

In this section, I propose to strengthen the thesis that SFRs may designate properties, and may belong to adjectival and adverbial categories, thereby extending the foundation for the argumentation in Part Two.

Larson (1987) questioned the analysis of data like (1b-c) and (19) as SFRs on the grounds that they do not have 'full' relative counterparts, i.e., counterparts with incontrovertible overt heads, as suggested by the deviance of (20). Furthermore, noting that data like (19) have (what he took to be) 'full' comparative paraphrases like (21), he proposed to view the former as 'free comparatives.'

(19) a. John will be **however helpful** you are willing to be.

b. John will work **however hard** you work.

(20) a.*John will be **the helpful** (that) his brother turns out to be.

b.*John will work **the hard** (that) you work.

(21) a. John will be as helpful as you are willing to be (however much that is).

b. John will work as hard as you work (however intense that is).

In Grosu (1996, p. 275), I pointed out that the free comparative analysis of data like (19) has a duty to explain why there are no free comparative counterparts to asymmetric full comparative constructions like (22), and Larson (1998, footnote 14), admitted he had no account of this fact.

(22) a. John will be {more, less} helpful than you are willing to be.

b. John will work {harder, less hard} than you work.

But a more decisive argument against the free comparative analysis of (19) is that even (21) do not seem to be correct paraphrases of (19). Thus, while (21) allow an 'at least' reading, (19) allow an 'exactly' reading only.

I propose to account for the semantic contrast between (19) on the one hand and (21)-(22) on the other as follows. While both sets of data involve abstraction over degrees and subsequent application of a MAX(imality) operator to the output of abstraction **within the subordinate clause** (see Rullmann 1995 on the applicability of MAX to both individuals and degrees), they differ with respect to what happens in the matrix clause. I take comparatives to express a relation between two degrees, one defined within the subordinate CP **by MAX**, and one defined within the matrix, **typically by existential quantification**, the nature of the relation being determined by such items as *more, less,* and *as*. In particular, I take the meaning of, say, (21a) to be essentially (in words): there is a degree d_1 such that John will be d_1 helpful and d_1 is at least as great as the degree d_2 such that you are willing to be d_2 helpful. As observed by an anonymous referee, an identity relation between the two degrees, and thus an exact paraphrase of (19a), is achieved just in case we replace *as* with *exactly as*. That is to say, an identity relation between the matrix and the subordinate degrees is not a property of comparative constructions *per se*, but rather of certain lexical items that occur in the matrix of some comparatives. – In contrast, I take the interpretation of the null CP-external material of SFRs to involve **preservation** of the output of MAX within the relative (following Grosu & Landman 1998). In particular, I propose to assume (i) that the SFRs in (19) have an external head of the form $[_{DP}\ [_{D}\ e]\ [_{DegP}\ [_{Deg}\ e]\ \ [_{XP}\ e]]]$, where XP = AP or AdvP, (ii) that the null D is compatible with the XPs just listed[5] and binds a(n unrestricted) set of degrees that vacuously intersects with CP, and (iii) that CP is the singleton obtained by applying MAX to the output of abstraction over degrees. Note that the 'exactly' interpretation of these constructions follows, since D will map the singleton designated by CP to its unique member (the maximal degree in the input set).

What has been said so far does not account for Larson's observation that data like (19) do not have full relative counterparts. Observe, however, that **some** property-designating SFRs, in particular, **nominal** ones like those in (23), do have full relative counterparts, as shown in (24).

[5] In contrast to the overt Ds in (20); see the remarks that follow example (24).

(23) a. John is likely to be **however helpful an adviser** his father was.

b. I will drink **however much wine** you want me to drink.

(24) a. John is likely to be **the helpful (kind of) adviser** that his father was.

b. It will drink **the ((precise) amount of) wine** that you want me to drink.

This points to the possibility that the ungrammaticality of data like (20), whose intended import is clear, may be no more that a reflection of a syntactic incompatibility between the overt definite article (of English) and adjectival/adverbial complements. In fact, some languages come close to allowing adjectival constructions with definite Determiners that bind a modifying degree variable; for example, Spanish allows 'concealed questions' (in the sense of Grimshaw 1979) with these properties, as illustrated in (25) (note that the definite article is neuter, rather than feminine, arguably a syntactic reflex of the fact that it semantically binds a degree variable).

(25) No puedes imaginarte lo inteligenta que es Maria.

not can-you imagine the.Neut.Sg. intelligent.F.Sg that is Maria

'You can't imagine the extent to which Maria is intelligent.'

Before concluding this section, I wish to note a point of special relevance to the analysis of TFRs I will propose. In addition to SFRs like those in (19) and (23), which designate properties 'modified' by unique (maximal) degrees, there exist property-designating SFRs that do not necessarily involve degree modification, and which may furthermore be underspecified with respect to syntactic category. Illustrations are provided in (26a-b), where categorial underspecification is brought by the possibility of both adjectival and nominal continuations.

(26) a. John is (exactly) **what** his mother wanted him to be (e.g., famous, a good father, etc.).

b. John can be **whatever** you want him to be (e.g., charming, an entertaining host, etc.).

The underspecification of the SFRs in (26) appears to be due to the conjunction of two factors: (i) the fact that the predicative position is categorially underspecified, as revealed by data like (27) (on this point, see, for example, Sag et al. 1985), and (ii) the fact that *what(ever)* – as well as its counterparts in various languages – is syntactically and semantically underspecified in a number of ways (for extensive discussion and illustration of the latter point, see Jäger 2000 and references therein).

(27) a. John is [[$_{AP}$ efficient[, [$_{NP}$ a good organizer], and [$_{PP}$ constantly on the move]].

3.2. Prepositional SFRs and prepositional overtly-headed relatives

This section is devoted to strengthening the thesis, put forward in Grosu (1996), that constructions like (1d) are **prepositional** SFRs. I begin by pointing out serious flaws, not mentioned in my 1996 article, in the alternative non-prepositional analysis of such data that was put forward in Larson (1987), and then offer novel argumentation in support of the prepositional analysis I had defended.

3.2.1. Problems with Larson's analysis of 'missing' P relatives

Larson (1987) was concerned not just with constructions like (1d), but also with incontrovertibly overtly-headed relatives with a 'missing' P, such as (28a), which some speakers of English find marginal or unacceptable, hence the '%' mark (Larson 1998, relying on Åfarli 1984, reports that such constructions appear to be more widely accepted in Norwegian).

(28) a.%I will live in every city that you live [$_{PP}$ e].

b. I will live in every city that you live in.

(29) a. I will write with whichever pencil you write [$_{PP}$ e].

b. I will write with whichever pencil you write with.

(30) a. John has kissed [every girl that Bill has [$_{VP}$ e]].

b. John has kissed every girl that Bill has kissed.

Noting that full and free constructions like (28a) and (29a) are synonymous with the corresponding (b) examples, which do not exhibit a missing P, Larson proposed to analytically relate the (a) and (b) subcases of (28)-(29) in exactly the way in which May (1985) proposed to relate data like the (a) and (b) subcases of (30). That is to say, he proposed to extend to (28a)-(29a) May's ACD analysis of (30a), which involves two LF operations: (i) application of QR to the bracketed complex DP, and (ii) reconstruction of the elliptical VP by copying the contents of the matrix VP into it; note that since QR leaves a trace within the matrix VP, the copying process also provides a trace (for the null operator or relative pronoun) within the reconstructed VP. Larson's extension of this analysis relied on the assumption that (28a) and (29a) include a nominal SFR with an internal elliptical PP which serves as complement to the overt P, and that following the application of QR, the overt PP is copied into the elliptical one.

I submit that this extension of (ii) from (30a) to (28a)-(29a), as well as the presumed dependence of PP reconstruction on QR, are objectionable moves. Anaphoric VP ellipsis is a phenomenon independently attested in a wide variety of contexts, for example, from an adverbial clause into its matrix and conversely, from an independent discourse sentence into another, and from a relative clause into another (in either direction), as illustrated in (31).

(31) a. While Bob may like Mary, Bill definitely doesn't [$_{VP}$ e].

b. While Bob possibly doesn't [$_{VP}$ e], Bill definitely likes Mary.

c. Bob likes Mary. Surprisingly, Bill doesn't [$_{VP}$ e].

d. The students that we hired are smarter than the ones we didn't [$_{VP}$ e].

e. The students that we did [$_{VP}$ e] are smarter than the ones we didn't hire.

Furthermore, the interpretation options available for constructions with antecedent-contained elliptical VPs are exactly as predicted by the independently established scopal range of QR. This can be appreciated by comparing (32) with (33) (the acceptability ratings in (32) are confined to the readings on which the boldfaced DP takes scope over the italicized DP).

(32) a. *A national flag* flies in front of **every government building**. OK

b. *Some terrorist* wants to kill **every cabinet minister**. OK

c. *Some bodyguard* is attached to the wife of **every cabinet minister**. OK

d. *Some terrorist* wants to kill the wife of **every cabinet minister**. OK

e. *Some student* believes that **every cabinet minister** is corrupt. *

(33) a. John saw [every bird that Bill did [$_{VP}$ e]].

[$_{VP}$ e] = see

b. John wants to read [every book that Bill does [$_{VP}$ e]].

[$_{VP}$ e] = {read, wants to read}

c. John read a report on [every book that Bill did [$_{VP}$ e]].

[$_{VP}$ e] = read a report on

d. John wants to read a report on every book that Bill does [$_{VP}$ e]].

[$_{VP}$ e] = {read a report on, want to read a report on}

e. John claimed that Mary saw [every bird that Bill did [$_{VP}$ e]].

[$_{VP}$ e] = {see, *claim that Mary saw}

(32) shows that QR can assign scope over the immediately containing clause, as well as out of an infinitival clause (subject to certain restrictions that need not concern us here) and/or out of a containing DP (see Kennedy 1997 for insightful discussion of this option), but not out of a finite clause. (33) shows that the construal options available for antecedent contained VPs are exactly as predicted by the scope of QR[6]. Thus, the construal that requires application of QR out of a finite clause is not available, as shown in (33e), while all other types of construal are, as shown in (33a-d).

No comparable states of affairs are detectable with respect to missing-P relatives. On the one hand, **the alleged process of PP-ellipsis is not independently attested in discourse or elsewhere**, as revealed by a comparison of (31) with (34).

(34) a. After John put a book on the table, Bill put a book *(on the table).

b. After Bill put a book *(on the table), John put a book on the table.

c. Bill put a book on the table. John didn't put a book *(on the table).

d. The students that we spoke about are smarter than those we didn't speak *(about).

e. The students that we spoke *(about) are smarter than those that we didn't speak about.

On the other hand, **construal options do not correlate with the scope of QR**. In particular, if we construct an example parallel to (33c) in the sense that the larger complex DP that immediately contains the bracketed DP is the complement of a P, the intended reading is unavailable. This can be appreciated by comparing the (a) and (b) subcases of (35) and (36).

(35) a. I will live in the suburbs of [every city that you do].

[$_{VP}$ e] = live in the suburbs of

b.*I will live in the suburbs of [every city that you live].

[$_{PP}$ e] = *in the suburbs of

(36) a. I will live in the suburbs of [whichever cities you do].

[$_{VP}$ e] = live in the suburbs of

b.*I will live in the suburbs of [whichever cities you live].

[$_{PP}$ e] = *in the suburbs of

[6] A reviewer adverts to Moltmann & Szabolcsi (1994), who discussed constructions like (i), where the universal quantifier takes scope out of the finite interrogative complement. The reviewer also notes that in (ii), wide scope does not license ellipsis. However, wide scope in (i) was not achieved by QR in the paper cited by the reviewer, and since May's account of ACD depends specifically on QR, not just on scope, (i)-(ii) do not weaken the point made in the text.

(i) Some librarian found out which boy needed every book. $\forall > \exists$

(ii) Some librarian found out which boy needed every book that Bill did [$_{VP}$ e]. [$_{VP}$ e] = {needed, *found out}

In short, there is both a lack of independent support for the presumed PP anaphoric ellipsis **and** evidence against the thesis that such a process is involved in the derivation of missing-P relatives. As far as I can see, these results constitute sufficient grounds for rejecting Larson's ACD approach to relatives with a missing P, and for seeking an alternative. I argue for a specific alternative in the next section.

3.2.2. The PP-headed analysis of relatives with a missing P

In Grosu (1996), I argued, on the basis of facts from English, French and German, that the overt P in overtly headed constructions like (28a) and in SFRs like (29a) forms a constituent with the 'small' adjacent DP, that is, with *every city* and *whichever pencil* respectively (for strengthening of the argumentation, see the Appendix). I also proposed there that the null material in the two constructions, that is, the operator in [Spec, CP] in (28a) and the CP-external 'head' in (29a), should also be analyzed as prepositional, for reasons I discuss below, offering further supportive argumentation. What this implies, under a right-adjunction analysis of relative CPs (which I will assume here for simplicity), is that the relative clause in (28a) and (29a) cannot be adjoined to NP, as it presumably can in (28b) and (29b), but rather must be adjoined to PP, yielding a PP-headed structure.

Given the conclusion just reached, it follows that in the (a) subcases of (28)-(29), the relative clause cannot semantically combine with NP in a strictly compositional fashion, that is to say, in the way in which it can combine with NP in the corresponding (b) subcases. Nonetheless, the intuitively perceived relation between CP and NP is the same in the corresponding (a) and (b) subcases, and the synonymy of the subcases needs to be captured in some way. The necessary technique is straightforward, and was developed in Bach & Cooper (1978) in relation to synonymous data like (37), where the relative clause in the (b) subcase is extraposed, and presumably adjoined to IP.

(37) a. A man [who was wearing a funny green hat] just walked out.

b. A man just walked out [who was wearing a funny green hat].

The technique is, essentially, that in cases like (37b), the property expression that translates NP is conjoined with a property variable, call it R, the compositional interpretation ignores R until the derivation reaches the node resulting from the adjunction of the relative CP to IP, R gets abstracted over at this point, and the resulting function is applied to the meaning of CP. This enables CP to

combine with NP, just as in (37a), since following lambda reduction, CP is in effect interpreted in the position of R .

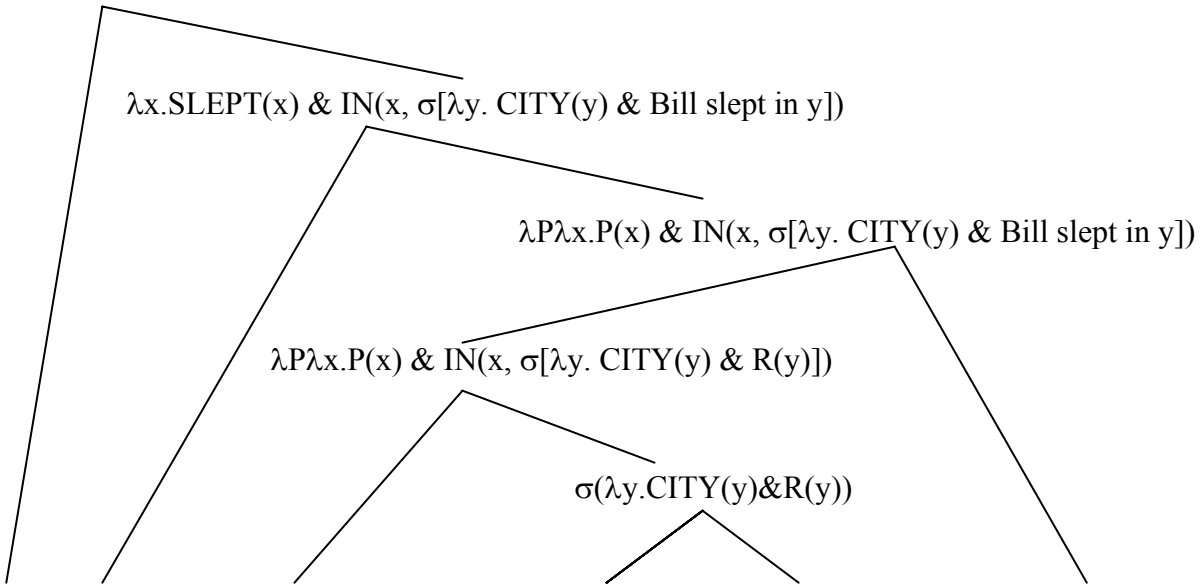
Essentially the same technique can be used with PP-headed relatives. I illustrate this point with (38a), whose syntactic structure is (38b) (ignoring *very* and tense).

(38) a. John slept in the very city that Bill slept.

b. [$_{IP}$ John [$_{VP}$ [$_{VP}$ slept] [$_{PP}$ [$_{PP}$ in [$_{DP}$ the [$_{NP}$ city]]] [$_{CP}$ [$_{P}$ *e* [$_{DP}$ *e*]] that Bill slept]]]

The pied-piped null P in [Spec, CP] is subject to LF-copying (since its antecedent has semantic content), and in this particular case, needs to be interpreted in its base-position, allowing the relative CP to be interpreted as essentially λy.Bill slept in y. Construal of *city* with a conjoined distinguished property variable yields λx.CITY(x) & R(x), and *the city* gets interpreted as σ[λy. CITY(y) & R(y)]. Assuming, for simplicity, a pre-Davidsonian semantics in which locative adverbs are functions of type <<e,t>,<e,t>>, *in* is interpreted as a function of type <e,<<e,t>,<e,t>>>, in particular, as λyλPλx.P(x) & IN(x,y), and *in the city* translates as λPλx.P(x) & IN(x, σ[λy. CITY(y) & R(y)]). At this point, R gets abstracted over, and the result is applied to the relative CP, so that *in the city that Bill slept* ends up with the same interpretation as *in the city that Bill slept in,* i.e., λPλx.P(x) & IN(x, σ[λy. CITY(y) & Bill slept in y]). For clarity, I outline below the compositional steps involved in the construal of (38b) (following reconstruction of the null P).

(39) SLEPT(j) & IN(j, σ[λy. CITY(y) & Bill slept in y])



The interpretive steps outlined in (39) may need to be slightly modified in other cases (that include the same P). For example, consider (40a-c).

(40) a. John slept in every city that Bill slept.

b. Some dog sleeps in every city that Bill sleeps (∀>∃)

c. I will live in every city that you live (= (28a))

To deal with (40a), where the complement of *in* is a generalized quantifier, *in* may be type-lifted to a function of type <<<e,t>,t>,<<e,t>,<e,t>>>, but the delayed intersection of *city* with CP is unaffected by this move; note that QR is not necessary here. To deal with (40b), QR or some equivalent mechanism must be applied, pied-piping the complex PP, adjoining it to IP, and leaving a trace interpretable as a variable of type <<e,t>,<e,t>>; at the IP level, this variable gets abstracted over, yielding a function of type <<<e,t>,<e,t>>,t>, which gets applied to the QR-ed complex PP, within which delayed intersection is achieved just as in (39). To deal with (40c), where the PP is an argument of *live*, and more generally with argument-introducing Ps, specific decisions must be made about the type and meaning of the various Ps. What grammarians call Ps are most likely to be a heterogeneous bunch, and considering all of them would take us much too far a-field. In the specific case of (40c) (and its variant with *the (very)* substituted for *every***),** one may view it as a function from individuals/generalized quantifiers to individuals, where the latter are locations within the former. Delayed intersection of NP with CP operates essentially as in (39), and (40c) (=(28a)) is ultimately assigned the same meaning as (28b).

The technique indicated in relation to (38) and (40) can also be adapted to SFRs like the one in to (29a), for which I assume the structure in (41).

(41) $[_{PP}\ [_{PP}\ [_{P}\ e]\ [_{DP}\ [_{D}\ e]\ [_{NP}\ e]]]]\ [_{CP}$ with whichever pencil you write]

Since NP is null, it expresses no restriction, and is thus an instance of the identity function; its translation is λy.y&R(y), which is equivalent to λy.R(y). The null P is reconstructed as *with*, and the null D is construed as definite (for reasons discussed in Grosu & Landman (1998), who refined and generalized the analysis of SFRs in Jacobson (1988, 1995); I return to this matter and consider it in more detail in section 6.1.). However *with* is interpreted, abstraction over R and application of the result to CP ensures that CP is ultimately applied to y, and that (29a) emerges with the same interpretation as (29b).

The fact that the (a) and (b) subcases of data like (28) and (29) are synonymous points to the conclusion that the *raison d'être* of PP-headed relatives is not semantic; that is to say, such relatives do not semantically modify P, but rather N(P), just as in the (b) subcases. Why do they exist then? I submit they arise in order to allow the compatibility of the Kases required by the matrix and the relative to be checked **in a maximally local configuration**. In particular, I propose that grammars include the following requirement (to be slightly revised below):

(42) The satisfaction of Kase restrictions of the kind referred to in (5) needs to be checked in the configuration <sister-of-CP, daughter-of-CP>.

I will argue for (the revised version of) (42) in two steps. First, I will provide novel support for the notion 'Kase', and second, I will show that the checking of Kase restrictions in the configuration of (42) is needed independently of relative constructions.

In Grosu (1994, section 1.4.1), I argued for 'Kase' by pointing out a number of striking parallelisms between affixal Case and Ps. I propose to strengthen that argumentation by refining and elaborating one of the arguments presented there.

Thus, Groos & van Riemsdijk (1981) proposed that strict matching requirements count as satisfied if the overtly realized affixal Case is **morphologically compatible** with the unrealized Case, even when the two Cases are distinct at the abstract (functional) level (Groos & van Riemsdijk 1981); this is illustrated by the contrast between (43a) and (43b), which holds for most speakers of Modern German (*was,* unlike *wer,* is compatible with both Nom and Acc status).

(43) a.%Ich liebe, [e_{Acc} [wer_{Nom} gutes tut]].

I like who good does

'I like (those) who do good deeds.'

b. Ich liebe, [e_{Acc} [was_{Acc} dir gefällt]].

I like what you pleases

'I like what pleases you.'

In Grosu (1994), I pointed out that the sufficiency of morphological compatibility is also demonstrable with respect to Ps, and offered an example I reproduce as (44a) in support. What (44a-b) show is that the Spanish P *a,* which can mark either a direct or an indirect object, can simultaneously satisfy functionally conflicting matrix and relative requirements.

(44) a. Escribí [e_{IO} [a quien$_{DO}$ viste t_{DO} ayer]].

Write-I a who saw-you yesterday

'I wrote to whom you saw yesterday.'

b. Encontré hoy [e_{DO} [a quien$_{IO}$ escribiste t_{IO} ayer]].

Met-I today a who wrote-you yesterday

'I met today who you wrote to yesterday.'

However, morphological indistinctness is sufficient for acceptability only when the functionally distinct Kases are both relatively 'low in obliqueness'; when at least one of the Kases is relatively high in obliqueness, functional conflicts[7] lead to unacceptability. Importantly, this state of affairs is found with both affixal Case and Ps.

I illustrate this point with respect to affixal Case by means of the German examples in (46)-(48), assuming the hierarchy of increasing obliqueness in (45), which holds for many Indo-European languages (on this point, see, e.g., Harbert 1983, Grosu 1994, Chapter 4, and references therein).

(45) Nom < Acc < Dat < Gen

(46) a. Ich hasse [e_{Acc} [was$_{Acc}$ du mir geschickt hast]].

I hate what you me sent have

'I hate what you sent me.'

b. Ich bin [e_{Acc} [was$_{Acc}$ du mir geschickt hast]] schon los.

I am what you me sent has already rid

'I am already rid of what you sent me.'

(47) a. Ich schreibe nur [e_{Dat} [wem$_{Dat}$ du schöne Bücher schenkst]].

I write only who you nice books give

'I write only to whom you give nice books as presents.'

b.??Sie richtet sich nur nach [e_{Dat} [wem$_{Dat}$ du schöne Bücher schenkst]]

she adjusts Refl only after who you nice books give

'She models herself only on whom you give nice books to as presents.'

[7]I am using 'functional distinctness' with an import that should be intuitively clear, but which I cannot define precisely here (a precise definition would require a separate study). The ingredients that presumably enter in the characterization of this notion are: (i) differences between (language-specifically motivated) abstract Cases, (ii) differences in thematic roles, where a more fine-grained classification of roles than is usually assumed may be needed, and (ii) distinct idiomatic uses of the same abstract and/or morphological Case.

(48) a. Er wurde angeklagt [e_{Gen} [wessen$_{Gen}$ er sich schuldig gemacht hat]].

he was accused what he Refl guilty made has

'He was accused of what he is guilty.'

b.*Angesichts [e_{Gen} [wessen$_{Gen}$ du dir schuldig gemacht hast]], möchte ich folgendes sagen:

concerning what you Refl guilty made have wish I following say

'Concerning what made yourself guilty of, I wish to say the following:'

In the (a) subcases of (45)-(47), the Cases required by the matrix and the relative concern arguments of verbs with comparable grammatical functions (direct object, indirect object, and some more oblique object respectively) and with comparable thematic roles (Theme, Goal, and Source respectively). In the (b) subcases, on the other hand, the Cases required by the matrix concern complements of adjectives (see (46)) or of prepositions (see (47)-(48)), while the Cases required by the relative clause concern complements of verbs identical to those found in the corresponding (a) subcases; I stress that the matrix Cases are all idiosyncratic and semantically unpredictable requirements of A/P, and thus presumably functionally distinct from the corresponding ones in the relative. Now, this state of affairs seems to cause no problems in (46b), causes some deviance in (47b), and leads to severe ungrammaticality in (48b), pointing to the conclusion that **sensitivity to functional distinctions increases with Case obliqueness**.

Similar effects are detectable with respect to Ps, as can be gathered from an examination of the German, English, Romanian and Spanish data in (49)-(52) respectively.

(49) a. Er sitzt [e_{auf} [{auf was, worauf} sie liegen will]].

he sits on what whereof she lie wants

'He sits on what she wants to lie.'

b.*Ich verlasse mich [e_{auf} [auf wen du wartest]].

I rely Refl on whom you wait

'I rely on whom you are waiting for.' [*intended sense*]

(50) a. He always stretches out [e_{on} [on whatever his wife wants to sits]].

b.*He insists [e_{on} [on whichever chair his wife is sitting]].

[cf. *he insists on whichever chair his wife is sitting {on, near}*]

(51) a. M-am culcat [e_{pe} [pe ce erai culcat şi tu]].

Refl-have.1.Sg laid on what were lain and you

'I lay on what you were lying.'

b.* Am întâlnit [e_{pe} [pe cine era ieri culcat Ion]].

(I) have met on who was yesterday stretched-out Ion

'I met (the person) on whom Ion was stretched out yesterday.'

(52) a. Hablé hoy [e_{con} [con quien tu bailaste ayer]]

(I) spoke today with whom you danced yesterday

b.*Sonaba [e_{con} [con quien tu saliste ayer]][8].

dream.Imperf.1.Sg with who you went-out yesterday

'I was dreaming (about the one) with whom you went out yesterday.' [*intended sense*]

In the (a) subcases, the P-requirements of the matrix and relative clauses concern locative (static or directional) adverbials in (49)-(51), and comitative adverbials in (52). In the (b) subcases, on the other hand, the matrix and subordinate P-requirements concern two distinct idiosyncratic verbal arguments in (49), an idiosyncratic verbal argument and a locative adverbial in (50), a direct object marker (analogous to Spanish *a*; see (44)) and a locative adverbial in (51), and an idiosyncratic verbal argument and a commitative adverb in (52). Note that each of the (b) subcases of (49)-(52) involves at least one P-requirement that either concerns an adverbial or constitutes an idiosyncratic property of a verbal argument, and is thus oblique. The fact that (49b)-(52b) contrast in acceptability with (44a-b) shows that Ps, just like affixal Cases, **increase in sensitivity to functional distinctions as they increase in obliqueness**. This result strengthens the thesis (put forward in Grosu 1994) that affixal Case and Ps are different realizations of a broader category Kase, Ps being, so to speak, an extension of the Case system.

I now turn to (42), which defines the local configuration in which, I proposed, restrictions on Kase mismatches (as well as Case attraction in either direction) are operative. An anonymous reviewer asks whether (42) is justified independently of relative clause constructions. Kennedy (forthcoming) argues persuasively that Comparative Deletion applies to the compared phrase within the comparative subordinate clause in a local configuration that is virtually identical to the one defined in (42), in particular, in the configuration formed by the 'head' of the comparative construction and the compared phrase in [Spec, CP] (he provides evidence that the compared phrase is not deleted *in situ*). This configuration differs from the one in (42) only in that projections headed

[8] Suner (1984) marks this example as acceptable, but her judgment appears to be idiosyncratic, since four native speakers I consulted all found this sentence unacceptable.

by items like *than/as* may intervene[9]. Now, a highly interesting fact is that when the two phrases involved in comparison potentially bear affixal Case, the kind of language-specific restrictions on Case mismatches that are operative in relatives also show up in comparatives. I know of no study of Case (mis)matches in comparatives in the literature, and I can only provide supportive data from Romanian at the moment, but the relative-comparative parallelism is striking, and will be hopefully confirmed by an investigation of further languages with affixal Case.

In SFRs, Romanian tolerates mismatches between Dat and Nom, provided that the morphologically realized Case is Dat. Mismatches between Dat and Acc with overt realization of Dat result in slightly lower acceptability. Mismatches between Dat on the one hand and Nom or Acc on the other result in crashing unacceptability when Dat is the suppressed Case. For illustrations, see Grosu (1994, section 4.3.2.1.1.). With this in mind, consider the following data.

(53) a. Dan s-a adresat mai multor persoane decât *e* erau gata să-l primească.
Dan Refl-has addressed more many.Dat people than e_{Nom} *were ready Subj-him receive*
'Dan approached more people than were ready to receive him.'

b.?Dan s-a adresat mai multor persoane decât cunoaşte *e* Ion.
Dan Refl-has addressed more many.Dat people than knows e_{Acc} *Ion*
'Dan has approached more people than Ion [personally] knows.'

c.*Dan a cunoscut mai multe persoane decât s-a adresat *e* Ion.
Dan has known more many.Acc people than Refl-has addressed e_{Dat} *Ion*
'Dan has met more people than Ion has approached.'

The above data, which, as already noted, are strikingly parallel to what goes on in Romanian SFRs, points to the conclusion that a common local domain concerns Kase restrictions in both relatives and comparatives. I suggest the following slightly modified version of (42).

(54) In complex XPs with a filled [Spec, CP], Kase mismatches between the CP-external head of the XP and the phrase in [Spec, CP] are subject to varying language-specific restrictions when one of these two phrases, but not both, is null.

This final version abstracts away from possible intervening projections in comparatives, and also applies when the subordinate CP is extraposed.

[9] I am grateful to another anonymous reviewer for bringing Kennedy's paper and its potential relevance to my attention.

Summarizing the results of this section, PP-headed relatives pose no serious problems for semantic interpretation, and are licensed by the need to check Kase compatibility restrictions in the independently needed configuration defined in (54). It encounters none of the difficulties that confronted Larson's ACD proposal, because it does not rely on (a non-existent process of) PP ellipsis, and does not depend on the application of QR. Furthermore, it can successfully deal with the deviance of the (b) subcases of (35)-(36). Thus, (36b) cannot be generated, since in order to satisfy the configuration in (54), the structure of this example would have to be (55). But the boldfaced phrase in [Spec, CP] violates general conditions on Pied-Piping in SFRs (see (8b-c)), and this example is unsurprisingly deviant. As for (35b), it needs to have the structure in (56) (with CP adjoined to the boldfaced PP) if it is to satisfy (54). With this structure, the intended reading (with *every* taking wide scope over *the*) is unavailable, and the sentence surfaces with the irrelevant and factually absurd reading that the speaker and the addressee will live in suburbs **that are suburbs of every city** (a sensible example with a comparable structure is *I will live in every suburb of Paris that you live (in)*).

(55) I will live [e_{PP} [$_{CP}$ **in the suburbs of whichever cities** [$_{IP}$ you live]]].

(56) I will live [$_{PP}$ [$_{PP}$ **in the suburbs of every city]** [$_{CP}$ e_{PP} you live]]].

3.3. Intermediate Stocktaking

In Part One of this paper, I have offered novel evidence that SFRs are null headed and trans-categorial. That TFRs are trans-categorial has never, to my knowledge, been contested, and is illustrated by (2). In section 5, I provide evidence that TFRs are also null-headed. We thus now have a solid foundation for developing the thesis that TFRs are SFRs.

PART TWO

4. Earlier research on TFRs

TFRs were first signalled in the generative literature by Nakau (1971), who referred to them as 'pseudo-free relatives.' His work was later elaborated on by Kajita (1977), whose results were summarized in McCawley (1988). McCawley's report on Kajita's work led to further elaborations by Wilder (1998). Additional work based on all the references just cited was carried out in van

Riemsdijk (1998b, 1999, 2001). Without exception, these various writers viewed TFRs as a syntactic construction radically different from SFRs in its configurational and/or derivational properties, and while they paid only cursory attention to semantics, they also implied that TFRs require a semantic analysis radically different from that of SFRs.

I can see at least two plausible reasons for this consensus among earlier writers on the topic:

[A] As briefly noted in section 1, while the wh-phrase is the impressionistic semantic and syntactic nucleus of the construction in SFRs, in TFRs, this privilege belongs to the predicate of a small clause whose subject is the (chain headed by the) wh-phrase. I note in passing that the pre-theoretical term 'transparent' was coined by Wilder due to the *prima facie* impression (which Wilder viewed as **incorrect**, but which I argue below is **correct**) that the small-clause predicate can project its nucleus properties from an arbitrary depth of embedding. I will pre-theoretically refer to this element as the *Transparent Nucleus (TN***)**.

[B] The remainder of the TFR was felt to have the force of a parenthetical modifier of the TN, usually with the import of a 'hedge.'

Faced with these observations, in particular, with [A], there are (at least) two conceivable analyses that come to mind: (i) To 'take the bull by the horns', and to analyze the TN as the TFR's actual clause-external head (much as Bresnan & Grimshaw did with respect to SFRs). (ii) To view the TN's apparent position as being in fact its **real** position, and to attempt to derive its head-like properties from independently motivated processes. All the earlier analyses referred to above adopted strategy (i), non-trivial differences among them notwithstanding. In what follows, I argue for an analysis that adopts strategy (ii). I regard the choice between (i) and (ii) as an empirical matter, and will support the latter with empirical arguments.

4.1. Proposed characterizing properties of TFRs

In this section, I look more closely at [B] and [A] – in that order – providing illustrations and, where appropriate, critical remarks.

To get an idea of [B], consider the following data. TFRs are bracketed, and TNs appear in boldface; (57)-(58) are reproduced from Nakau, who collected them from actual texts.

(57) a. The general term occupies [what grammarians call [$_{SC}$ t **predicative position**]].

b. Chomsky's views were formed in [what he refers to [$_{SC}$ t as '**the radical Jewish**

community in New York']].

c. Along these lines, a number of facts fall together in [what seems [$_{SC}$ t **quite a natural way**]].

(58) a. Lakoff has made [what appears to be [$_{SC}$ t **a radically new proposal**]].

b. [What appeared at first sight to be [$_{SC}$ t **a profound issue**]] dissolved into nothing on analysis.

(59) a. There is now on your plate [what no one in his right mind would call [$_{SC}$ t **a steak**]] (e.g., because it is in fact a dead rat).

b. Bill is [what nobody would call [$_{SC}$ t **an optimist**]] (he thinks the world will end soon).

The parenthetical/hedge characterization referred to in [B] might perhaps seem appropriate for (57a-c), which arguably have the rough, albeit not exact, import of (60). The hedging effect is traceable to the verbs *call, refer to .. as, seem,* which signal that the truth of the relative-internal small clause within the innermost set of brackets in (57) is not necessarily assumed by everybody, even if it happens to be assumed by the (potential) speaker/writer.

(60) a. The general term occupies **the predicative position**, as grammarians call it.

b. Chomsky's views were formed in **the radical Jewish community in New York**, as he (himself) refers to it.

c. Along these lines, a number of facts fall together in **quite a natural way**, as it seems.

The parenthetical/hedge characterization seems less appropriate, however, with respect to (58)-(59), where the speaker/writer disagrees with the import of the small clause, or at least has serious reservations about it. This can be seen in relation to (61)-(62), which are constructed along the lines of (60), but in no way even look like successful paraphrases of (58)-(59).

(61) a. Lakoff has made **a radically new proposal**, or so it may seem.

b. **A profound issue**, or so it may have appeared at first sight, dissolved into nothing on analysis.

(62) a.#There is now **a steak** on your plate, as no one in his right mind would call it.

b.#Bill is **an optimist**, or nobody would call him that.

Note that (61a-b), although linguistically acceptable, are not synonymous with (58a-b). In (61), the parenthetical expression contradicts the main assertion (it sounds as though the speaker has changed

his/her mind in mid-stream), while in (58), this is not the case. In (62), the parenthetical is not even linguistically acceptable. What I submit is a better characterization of what goes on in (57)-(59) is that the TN is not necessarily claimed to correctly characterize its extension in all the worlds or under all the circumstances associated with the main clause, while in (60)-(62), such a claim **is** made. In view of this, I propose the following felicity condition on TFRs:

(63) The small clause whose predicate is the TN is felicitous just in case it is in the scope of a TFR-internal **intensional operator**.

What (93) says is, essentially, that a TFR is felicitous just in case it implies that the predication expressed by the small clause does not necessarily hold in **all** contextually relevant possible worlds and/or at **all** contextually relevant moments in time. That is to say, a TFR minus its small clause has the essential force of lexical intensional modifiers like *alleged(ly), presumed(ly), previous(ly), former(ly)* (nonetheless, I am **not** proposing to fully assimilate the semantics of the two constructions; see section 6.2.). That (63) is a necessary condition for the felicity of TFRs can be seen by examining the following data.

(64) a. John has become (?*what is) unbearable.

b. John has become what many people would characterize as unbearable.

c. John has becomes what (definitely) IS unbearable, no matter what you may think.

(65) a. John lives in (?*what is) {Paris, a town}].

b. Jean lives in what was once {Lutèce, a village}, but is today {Paris, a town}.

c. Jean lives in what (definitely) IS {Paris, a town}, even if some people disagree.

Intuitively, the full versions of (64a) and (65a) add nothing to the corresponding full versions (for a more precise characterization, see section 6), and this seems to be in some way responsible for their infelicity. In contrast, (64b) and (65b) introduce a parameter of variation through their, respectively, intensional and temporal operators, and (64c)-(65c) introduce such a parameter, too, by indicating that while the speaker subscribes to the truth of the small clause, not everybody else necessarily does.

Having replaced [B] with the more precise (63), the next logical step is to turn to a closer examination of [A]. But before doing so, it will be useful to note a particular restriction on TFRs, which was viewed in past work as **another definitional property**, namely, that TFRs can only be formed with a 'bare' *what* (and its crosslinguistic counterparts), but not with wh-phrases like

whatever, who(ever), where(ever, when(ever), whichever books, etc. This is observationally correct in the sense that the various effects associated with TFRs occur just in case the wh-element is *what,* but I will argue in section 7.1. that this need not be stipulated as a primitive property, but rather can be derived from independent facts.

We now turn to [A], that is, to the claim that the TN functions as a semantic and syntactic nucleus of the TFR. In fact, we are only left with the task of examining the **syntactic** sense in which the TN functions as a nucleus, since the **semantic** sense has already been made intuitively clear (i.e., the TN is an element with respect to which the remainder of the TFR has the force of an intensional modifier). Thus, the *prima facie* impression is that a TN is to its TFR what the boldfaced noun is to the containing italicized DP in *the alleged **thief***. As we will see in section 6.2,, this impression is basically correct, but with some non-trivial provisos.

Each of the earlier scholars who discussed TFRs assumed the transparency properties proposed by those who preceded him, and added new ones. All in all, I am aware of nine proposed transparency properties. I argue in what follows that only four of these are real, the remaining five being spurious, and three of them in fact yielding arguments against the analyses that their defenders attempted to build on them.

I begin with the four properties I view as correct. The first three concern matching effects between the TN and the TFR, the fourth, a language-specific effect that concerns the linear position of the TN within the TFR. The first two effects were noted by Nakau, the third by Kajita, and the fourth by van Riemsdijk. The first three were re-addressed by Wilder, who put them on a firmer empirical basis.

4.1.1. Syntactic Number

Wilder observes that in data like (66a), the FR initiated by *what* may well designate a plurality of objects, but triggers singular agreement on the matrix verb. Since there is no internal small clause configuration with *what* as subject, the FR in (66a) does not qualify as a TFR. The FRs in (66b-c) do, however, qualify as TFRs, and their syntactic number is clearly determined by the TN, since *what* has the same morphological shape in both cases.

(66) a. [What you found t in this drawer] {belongs, *belong} to me. **SFR**

b. [What seems to be **a book**] {is, *are} lying on the desk. **TFR**

c. [What seem to be **books**] {are, *is} lying on the desk. **TFR**

4.1.2. (In)definiteness

Wilder pointed out that the (in)ability of a TFR to appear in contexts of 'indefiniteness', such as the existential *there BE --- XP* context, depends on the (in)ability of the TN to occur in the same context. This can be appreciated by noting the parallelism between (67a) and (67b).

(67) a. There is {**a virus, the most dangerous virus imaginable, *the virus**} in this program.

b. There is [what appears to be {**a virus, the most dangerous virus imaginable, *the virus**} in this program].

It is of interest to note that the ability of TFRs to occur in contexts of indefiniteness was regarded by Wilder and van Riemsdijk as an indication that TFRs constitute a construction distinct from SFRs, which, they alleged, are barred from such contexts. That is to say, they regarded the existence of the acceptable versions of (67b) as one of three alleged 'definitional' properties of TFRs (the other two being the fact that the wh-phrase can only be *what,* and that it must bind the subject of a small clause; I argue below that only the last is a genuine definitional property). Translated in our terms, their thesis amounts to the view that a uniqueness operator does not, or, at least, need not apply to the output of abstraction within CP. This thesis, however, draws its justification from an incorrect assumption, since SFRs are not **in general** barred from existential contexts, but only when a uniqueness operator has applied to **individuals**. When such an operator applies to **degrees or kinds**, SFRs are felicitous in the context at issue, just like comparable simplex expressions (Carlson 1977, Heim 1987). This is illustrated in (68).

(68) a. In this vat, there is just the {kind, amount} of wine that I consider ideal.

b. There will be on your desk tomorrow [whatever {number, kind} of books she happens to ask me to put there].

c. There will on your desk tomorrow [however many books there happen to be on the boss's desk at the moment].

This leaves open the possibility that TFRs are simply SFRs in which a uniqueness operator applies to something other than individuals, in particular, to properties. I argue in what follows that this is precisely what happens in TFRs.

4.1.3. Syntactic Category

Kajita showed that the TN of a TFR may be not only a nominal expression, as in the examples we have seen so far, but also an AP, an AdvP or a VP, as in (69a-c).

(69) a. Her voice was soft and silky and [what I can only describe as **dangerous**].

b. He came out the next day, but I didn't get a chance to talk to him
[what you might call **privately**].

c. He felt my mother was [what he called **poisoning my mind**].

Kajita claimed that the positions in which the TFRs occur in data like (69) show that they match their TNs in syntactic category, but this claim is correct only with respect to (69b-c). In (69a), the TFR is coordinated with two APs, but heterocategorial coordination is possible in this position, which is categorically underdetermined, as already noted at the end of section 3.1. (see (27)). A position that forces AP status is, however, the attributive pre-nominal position (see (70a)), and as Wilder observed, TFRs may occur in this position just in case their TN is adjectival (see (70b)).

(70) a. He made a {catastrophic, *catastrophe} decision.

b. He made an uninspired and [what I'd describe as {catastrophic, *catastrophe}
decision.

Wilder also observed that a TFR with an adjectival TN may not occur in a nominal argument position, as in (71). More exactly, (71) is acceptable only if the wh-phrase, rather than the small clause predicate, constitutes its semantic nucleus, that is, only if it is **not** construed as a TFR.

(71) [What I'd describe as **stupid**] is lying on this desk.

In short, there is evidence that the TN and the TFR must be categorially matched.

4.1.4. Right-edge effects

A number of languages, including English and various Germanic and Romance languages (but excluding, for example, Russian and Modern Greek), exhibit a restriction on pre-nominal APs which is usually characterized as in (72), and which is illustrated in (73a). Van Riemsdijk (1998b) pointed out that in pre-nominal adjectival TFRs, (72) must be satisfied by their TN, as illustrated in (73b). Thus, the head of the TN appears to behave like the syntactic head of the TFR for the purposes of (72). In section 7.5., I show that REC's characterization in (72) is not quite correct, and that the correct version does not lead us to the conclusion just stated.

(72) **The Right Edge Constraint (REC)**

A pre-nominal attributive AP must exhibit its adjectival head at its right edge.

(73) a. He made a [$_{AP}$ scandalous (*in a number of ways)] proposal.

b. He made a new and [$_{AP}$ what I'd describe as **scandalous** (*in certain ways)] proposal.

As noted earlier, I view the five remaining properties proposed by my predecessors as spurious. Of these, I consider two to be irrelevant to the issue of the transparency of TFRs, and I examine them in the next two sections. The remaining three will be considered in section 6, which deals with evidence against the analyses of my predecessors; I will argue that these alleged transparency properties are in fact opacity properties, and that they yield evidence against the analyses that their proponents sought to erect on them.

4.1.5. The human/non-human distinction

Wilder proposes, on the basis of (74a-b), that the verb *invite* selects a [+human] object, and that neither bare *what* nor SFRs with bare *what* can fulfil this requirement. Wilder further observes that the TFR in (74c) is a possible object of *invite*, and concludes on this basis that the matrix selectional requirements are satisfied only thanks to the TN, *what* playing no role in this connection.

(74) a. #I liked [what he invited]

b. #I invited [what he recommended].

c. She invited [what I took to be a policeman].

These conclusions are, however, overhasty. For one thing, what seems to be involved here is arguably not selectional restrictions, but rather some more general notion of 'compatibility with a context', since, as a reviewer cogently observe, none of the verbs in (74a-b) **require** human objects, it being possible, for example, to *invite disaster, recommend books,* and, of course, *like anything at all*. The particular effects in (74a-b) are, it would seem, the result of interaction between inherent properties of *what* and contextual factors.

On the one hand, the underspecification of *what* goes further than was pointed out at the end of section 3.1. Thus, the 'gap' of *what* may (also) stand for two distinct semantic variables, an

individual one and a degree or kind variable that 'modifies' the former, as Heim (1987) showed; this thesis is based on the fact that when the trace of *what* lies in the context *there be --- XP,* as in *what there is t on your desk is too expensive*, the individual variable needs to be viewed as existentially bound, which implies that the uniqueness operator needs to bind some other variable (for an account of SFRs which exhibit the internal configuration just noted and are nonetheless construed as designating a unique sum of individuals, see Grosu & Landman 1998). In addition, *what* can bind property variables (e.g., *What do you think that Jack really is?* ***Vicious****, I would say*), and – as I shall argue in section 6 – pairs of individual and property variables, where the latter modifies the former. – On the other hand, there are certain limits to the underspecification of *what.* Thus, when *what* binds (just) an individual variable, the individual(s) may be non-human or of unspecified humanness (e.g., *What can you see? John, Mary, and a tree*), but not strictly human (e.g., *What did she marry? #Bob*). The acceptability of TFRs in various contexts depends, I submit, on the extent to which contextual factors make it possible to avoid a **strictly human individual** construal.

That the infelicity of (74a-b) is not attributable to the lexical choice of verbs in the matrix and in the relative can be appreciated by noting the felicity of (75a-c), which makes use of precisely the verbs that Wilder blames for the unacceptability of (74a-b).

(75) a. What did she invite? Mostly lawyers, doctors, people like that.

b. She invited only [what her husband asked her to invite]:
lawyers, doctors, etc.

c. She invites only what her husband recommends for top jobs:
Harvard graduates, friends of the Kennedy clan, etc.

The difference between (74a-b) and (75) are, I suggest, that in the latter case, the explicit continuations indicate that a *kind of* individual is meant (e.g., the intended import of the question in (75a) is clearly 'what kind of people did she invite?'). I suggest that in (74a-b), a kind construal is insufficiently salient, hence, its infelicity. If we modify (74a) minimally and append a disambiguating sequence, felicity is restored, e.g., *I heartily dislike what she invited to that party: nothing but riff-raff, the dregs of society.*

As for the contrast between (74a-b) and (74c), I attribute it to the fact that in the latter case, *what* binds a property variable 'modifying' an individual one, an approximate paraphrase of (74c) being 'she invited a person who possessed the property of being a policeman' (for a more precise

characterization of the meaning of such data, and for an explicit discussion of the semantics of TFRs, see section 6.2.). Note that if we substitute a referential expression for the TN, e.g., *that policeman*, (74c) becomes unacceptable.

In sum, the facts in (74) seem to have little relevance to the issue of TFR-transparency, and in no way show that *what* has a different syntactic function in SFRs and TFRs. In section 5.4., I present positive evidence that it has the same syntactic function in both constructions.

4.1.6. Idiom chunks

Van Riemsdijk (1999) observes that idiom chunks may be separated by TFR boundaries when one chunk is in the matrix and the other, within the TN; an illustration is provided in (76a). But it is not clear that the 'lower' chunk of the idiom needs to be licensed by the 'higher' one, since, as van Riemsdijk himself notes, the lower clause is a possible independent clause, as shown in (76b). If so, it is unclear that there is anything to explain. This conclusion derives further support from the observation that idiom chunks with a 'closer link' to each other do not readily permit the construction of TFRs, as brought out by the contrast between the two versions of (76c).

(76) a. Nick has *made* what one may call *significant headway*.

b. I would not call this *significant headway*.

c. Nick has kicked what may be called the *(proverbial) bucket.

4.2. Earlier proposed analyses of TFRs

As already hinted at at the beginning of section 4, the four writers who addressed TFRs in earlier studies all took the position that the transparency of TFRs is an illusion, and that the TN exhibits head-like properties because it is in fact a CP-external head. I now briefly outline the gist of their analyses.

Operating within the Standard Theory (and noticing only the existence of **nominal** TFRs), Nakau (1971) proposed that TFRs are transformationally derived from an underlying representation in which *what* is replaced by *a/the N which*. For example, he proposed to derive (77a) from (77b) by the transformation in (78).

(77) a. Lakoff has made [*what* appears to be a **radically new proposal**].

b. Lakoff has made [*a proposal which* appears to be a **radically new proposal**].

(78) X – [$_{NP}$ Det - [N, Num] – [$_{S}$ *which* – X – [+Subjective] – X – *be* – Det – X –

1 2 3 4 5 6 7 8 9 10

[N, Num] – X $_{S}$] $_{NP}$] - X

11 12 13 ➔ 1 *what* 5 6 7 8 9 10 11 12 13

Conditions: (i) 3 = 11.

(ii) 2 is Def if 9 is specific, and Indef if 9 is non-specific.

Note that the matching effects described in sections 4.1.3. and 4.1.2. above are accounted for by the stipulated conditions (i)-(ii). The right-edge effect of section 4.1.4, which Nakau does not address, cannot in principle be handled by this analysis. The feature [+Subjective] on term 6 of the structural description alludes to what Nakau views as the *'raison d'être'* of TFRs (a restricted and vaguely formulated version of the more precise intensionality requirement in (63)).

Operating within the Extended Standard Theory, Kajita (1977) proposed to account for the head-like properties of TFRs by assuming a rule of reanalysis which, as schematically shown in (79), turns the TN, analyzed as a small clause predicate in underlying representation, into the head of the TFR, and the remainder of the TFR, into an adjunct of that head.

(79) [$_{FR}$ … XP_{PRED}] → [$_{XP}$ [$_{FR}$ ….] XP_{PRED}]

Wilder (1998) raised conceptual objections against Kajita's rule of reanalysis, arguing that 'such a rule would alter theta-relations, turning an argument (the free relative) into a modifier, and turning a predicate (XP) into an argument.' He proposed instead to derive TFRs by a rule of backwards deletion from a structure that exhibits *two tokens* of the semantic head, one in the relative and one in the matrix. For example, (80a) is analyzed as schematically indicated in (80b).

(80) a. John bought what he took to be a guitar.

b. John bought [what he took to be ~~a guitar~~] a guitar.

Van Riemsdijk (1998b, 1999, 2001) pointed out a serious at least *prima facie* problem for Kajita's and Wilder's analyses, namely, the lack of an obvious account of TFR's whose TN is *string-medial*. Such TFRs are by no means rare. They are found, for example, in continental West Germanic languages, owing to the fact that TNs typically precede the clause-final verbal complex, and in languages like English whenever the TN is followed by PPs and/or adverbial. Illustrations of the possibilities just mentioned are provided, respectively, by the German example (81a) and by the

English examples (81b-e). Note that in (81d-e), the TN is string-medial with respect to a clause that is itself string-medial with respect to the relative.

(81) a. Ich habe mir [was man als **einen schnellen Wagen** bezeichnen könnte]

I have me what one as a fast car.ACC describe could

gekauft.

bought

'I have bought myself what one might call a fast car.'

b. There is now on your plate [what may conceivably look like **a rat** to anyone who views it from afar].

c. I just saw [what might well be taken for **a meteor** by naive observers when visibility is rather poor].

d. There is now in that corner [what might conceivably be assumed [to look like **a dragon** to me] by anyone unfamiliar with my perceptions].

e. I just noticed [what may well seem [to be construable as **an NP** by proponents of LFG] to people unfamiliar with that theory].

To meet the challenge raised by such data in a way that would still make it possible to analyze the TN as the head of the TFR, van Riemsdijk proposes to adopt a new theoretical approach, aimed at extending to subordinate structures an approach that earlier writers (e.g., Moltmann 1992) had developed with respect to coordinate structures. Within the proposed approach, trees may share proper subparts of their structures, crossing each other's branches in the process, with the result that nodes may end up having multiple mothers. In the case of TFRs, van Riemsdijk proposes to view the TN as shared by the matrix and the relative. Furthermore, he modifies the view of SFRs put forward in Groos & van Riemsdijk (1981) and proposes that the wh-phrase constitutes shared structure.

One problem with this approach is that its theoretical framework is not made sufficiently explicit. For example, it is not made explicit how relations between nodes, e.g., c-command, are to be defined on shared structures, nor how (compositional) semantics is supposed to interpret such structures. To be able to evaluate van Riemsdijk's analysis of TFRs, I will assume that the semantic nucleus *qua* element of the matrix c-commands the relative CP (and thus, itself, *qua* element of that

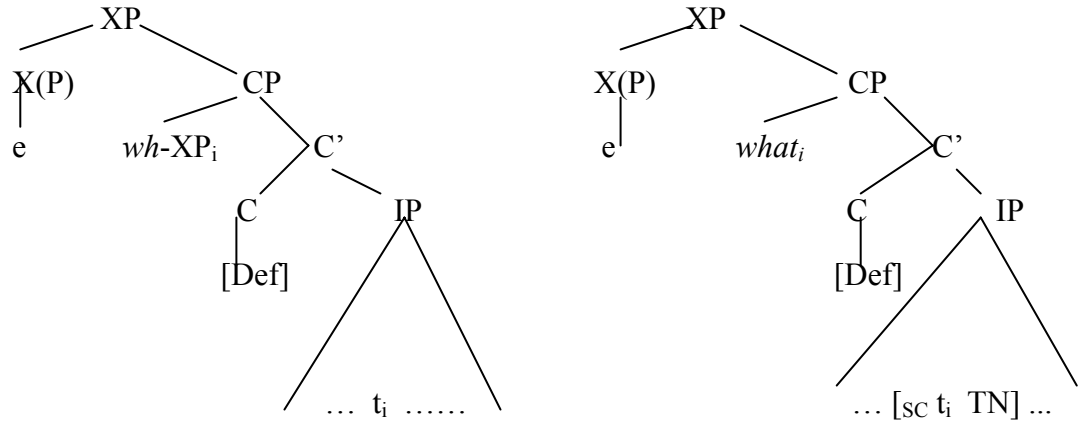
CP), and that the semantics interprets the two 'uses' of the shared element just like distinct tokens on conventional trees.

In the next section, I list a variety of empirical difficulties that besiege the four analyses just noted, and which are straightforwardly avoided by an analysis that assigns the same gross configurational properties to SFRs and TFRs.

5. Arguments for a common configurational analysis of SFRs and TFRs

In this section, I argue that the optimal configurational analysis of TFRs is as a special subinstance of SFRs, in particular, one in which bare *what* binds the subject of a small clause, and where that clause possesses special semantic properties (to be made explicit in section 6). The general case (SFRs) and the special case (TFRs) are schematically represented in (82a) and (82b) respectively. The feature [Def] on C is the trigger that activates a uniqueness semantic operator, and anticipates discussion that takes place in section 6.

(82) a. b.



5.1. String-medial TFRs

As noted in the preceding section, Kajita and Wilder have no analysis for data like (81). Van Riemsdijk does, but at the cost of introducing an innovation whose theoretical consequences have not yet been evaluated. The analysis in (82b) has no problem whatsoever with such data.

For completeness, I note that Nakau's analysis can be adapted to deal with (81). What is needed is to slightly refine the transformation in (78), in the sense that *which* is mapped to *what* and the terms 2 and 3 are mapped to null categories. In this case, the output of the transformation becomes indistinguishable from (82b). But an analysis along these lines suffers from conceptual and

empirical problems that are traceable to the Standard Theory framework it assumes: On the one hand, transformations like (82) have no place in current syntactic theorizing, and on the other, the input to (78) is inadequate for semantic interpretation, as will be seen in section 5.3.

5.2. The Nachfeld argument

(82b) predicts that the overt material of a TFR should be acceptable in the Nachfeld for the same reason that the overt material of an SFR is. This prediction is confirmed by (83). Van Riemsdijk, however, has a problem with such data, since the TN constitutes shared structure, and the bracketed constituent must be considered a DP, not a CP. I note in passing that his reanalysis of SFRs in terms of shared structure encounters the same kind of problem with respect to data like (15). – Kajita's and Wilder's approaches cannot even be tested with respect to (83) because, as just noted, they have no analysis of TFRs with string-medial TNs.

(83) Dass vor ihm liegt, [was viele als **ein ekelerregendes Schweinkotelett**
that before him lies what many as a revolting pork-chop
bezeichnen würden], überrascht mich.
describe would surprises me
'That there is what many would call a revolting pork-chop in front of him surprises me.'

5.3. An intensionality scope argument

As briefly noted above, Nakau basically realized that the TN needs to be in the scope of an intensional operator. He failed to realize, however, that his analysis cannot express this fact, and this, because it posits a token of the (nominal head of the) TN **outside the scope** of the intensional operator. Nakau appears to assume that this move is innocuous; thus, he states that (77b) is an exact paraphrase of (77a), and in fact submits that this paraphrase relation constitutes support for his analysis. However, the paraphrase relation between (77a) and (77b) is a mere accidental consequence of tacit contextual assumptions. If we place the TN of (77a-b) in a different linguistic context, the paraphrase relation vanishes, as illustrated in (84), whose (b) subcase is contradictory, while the (a) subcase is not. The paraphrase relation is also absent in another construction that Nakau discusses without noticing the problem it creates; thus, note that (85b) is tautological, but

(85a) is not. An additional example that dramatically highlights the problem created by placing a (sub)token of the TN in external head position is provided in (86).

(84) a. Bob is reading what seems to his wife to be a radically new proposal,
but is in fact a letter from his mistress. ≠

b. Bob is reading a proposal that seems to his wife to be a radically new proposal, #but is in fact a letter from his mistress.

(85) a. Lakoff has a made *what* appears to be a proposal ≠

b. Lakoff has a made *a proposal which* appears to be a proposal.

(86) a. John is kissing what may appear to some observers to be three vertical lines,
but is in fact Mary dressed in a funny costume. ≠

b. John is kissing three lines which may appear to some observers to be three vertical lines, #but is in fact Mary dressed in a funny costume.

The consequences of the intensionality facts for Kajita's, Wilder's and van Riemsdijk's analyses are harder to evaluate, since these writers, unlike Nakau, do not posit a paraphrase relation between TFRs and an independently attested construction. One feature that seems to be common to all three of them, though, is the assumption that the TN conveys its semantic (and syntactic) properties to the TFR **without involving the chain headed by *what***. Furthermore, none of these three writers gives any inkling concerning the interpretation that the chain headed by *what* is supposed to receive, and without an explicit stand on this point, it is hard to evaluate the compatibility of their analyses with the intensionality facts.

As far as Kajita's analysis is concerned, one could perhaps account for intensionality by proposing that scope is established on pre-reanalysis structures. Such an assumption would, however, be inconsistent with the architecture of the Extended Standard Theory, which Kajita assumes. Alternatively, one could adapt Kajita's proposal in a way that avoids the architectural problem just noted, for example, by assuming that reanalysis leaves a trace within CP, essentially as schematically indicated in (87).

(87) $[_{XP}\ [_{FR}\ \ldots.\ e_i\ ]\ XP_i\ ]$

If we assume that e_i is a variable of the same logical type as XP, it may be abstracted over at the FR level and the result may be applied to XP; lambda reduction will ensure that XP is interpreted in the scope of the intensional operator. Note, however, that such an analysis leaves unaccounted for the

fact that XP is the semantic nucleus of the TFR, since its CP external position of XP plays no role in the semantics. And furthermore, Kajita's analysis is open to the objections noted in section 5.1. and 5.2. and to additional ones that will come up in subsequent sections.

Concerning Wilder's analysis, which posits two base-generated tokens of the semantic nucleus, one internal and one external to CP, if the proposed deletion (presumably in PF) of the lower token is accompanied by a comparable deletion in LF, more exactly, by the substitution of a variable for the lower token, the outcome is essentially (87), with the consequences just seen. An anonymous reviewer suggests doing the rough converse of the foregoing, in particular, deleting the upstairs token in LF and substituting a lambda operator for it. This might make it possible to capture both intensionality and the intuition that the TN is the nucleus of the TFR, but in order to evaluate its overall adequacy, it is necessary to know what semantic contribution is attributed to the chain headed by *what*. My suspicion is that if this chain is construed in the usual way, that is, in terms of abstraction over a variable, the semantics assigned to TFRs will be a variant of the semantics I propose in section 6, except that it will involve otherwise unneeded complexities, in particular, a configuration distinct from that of SFRs, and a process of LF 'deletion.' More seriously, such an analysis is open to all the additional objections that confront Kajita's analysis.

With respect to van Riemsdijk's, an evaluation in relation to the intensionality facts is complicated by the incomplete specification of the theoretical framework he assumes. However, to the extent that the proposed double motherhood of the TN implies that the latter is a syntactic member of both the matrix and the subordinate clause, van Riemsdijk's analysis reduces to Wilder's *modulo* the different framework of description, and faces the same consequences. Furthermore, it is open to the different objections to which Kajita's and Wilder's are, except the one in section 5.1.

In sum, Nakau's analysis is unable to deal with intensionality, and Kajita's, Wilder's and van Riemsdijk's may succeed, but only at the cost of incorporating otherwise unnecessary complications.

5.4. Case restrictions in SFRs and TFRs

Van Riemsdijk (1999, 2001), relying on his shared-structure analysis of both SFRs and TFRs, predicts that comparable Case-matching requirements should be found in both constructions, *modulo* the choice of the shared element. He sees this prediction confirmed by data like (88) and

(89), which, he reports, are both ungrammatical on all their versions (note that each version involves a Nom/Acc conflict between the requirements of the matrix and of the relative clause). The idiolect in which these judgments hold (presumably, van Riemsdijk's own) appears, however, to be idiosyncratic. Speakers of Modern German report three types of judgments with respect to (88a-b): (i) rejection of both subcases, (ii) acceptance of (i) only, and (iii) acceptance of both subcases; an investigation I conducted with fifteen native informants from geographically different areas revealed all three possibilities. In contrast, the same fifteen informants showed a uniform response pattern with respect to (89): acceptance of the unstarred versions and unhesitating rejection of the starred versions.

(88) a.%**Wen** sie mir empfohlen hatte **t** erwies sich als ungeeignet.
who.Acc she me recommended had showed himself as unsuitable
'(The one) she had recommended proved to be unsuitable.'

b.%Ich liebe **wer t** Gutes tut, und hasse **wer t** mich verletzt.
I love who.Nom good does and hate who.Nom me offends
'I love (those) who do good, and hate (those) who offend me.'

(89) a. Ich habe mir gekauft, [was von vielen als {**ein schneller Wagen**,
I have me bought what by many as a fast car.NOM
einen schnellen Wagen} bezeichnet werden würde].
A fast car.ACC described be would
'I have bought myself what would be called a fast car by many people.'

b. [Was viele als {***ein schneller Wagen***, **einen schnellen Wagen**}
what many as a fast car.NOM a fast car.ACC
bezeichnen würden] wurde soeben gekauft
describe would is rarely bought
'What many people would call a fast car has just been bought.'

An analysis that assumes comparable structural relations between the various FRs in (88) and (89) on the one hand and the corresponding boldfaced elements on the other is hard-put to account for the presence vs. absence of idiolectal variation in SFRs and TFRs respectively. An analysis that posits the structures in (82a-b) and relies on (54) in relation to restrictions on Case has no reason to expect Case-matching problems in (89), since *was* is compatible with both Nom and Acc status. I

submit that the deviance of the starred versions has an entirely different source: it violates a general rule of German which requires Case agreement between the subject and the nominal predicate of an *als*[10] 'as' construction, a point illustrated in (90).

(90) a. Er wurde als {der grösste, *den grössten, *dem grössten} Held unserer Zeit
he.Nom was as the greatest.Nom the greatest.Acc the greatest.Dat hero our.Gen time
bezeichnet.
described
'He was described as the greatest hero of our times.'

b. Sie hat ihn als {*der grösste, den grössten, dem grössten}
she has him.Acc as the greatest.Nom the greatest.Acc the greatest.Dat
{*Held, Helden} unserer Zeit bezeichnet.
hero.Nom hero Acc our.Gen time described
'She described him as the greatest hero of our times'

c. Ich habe ihm als {*ein junger, *einen jungen, einem jungen} Mann oft geholfen.
I have him.Dat as a young.Nom a.Acc young a.Dat young man often helped
'I often helped him when he was a young man.'

What has been seen so far supports the conclusion – which follows from the conjunction of (54) and (82b) – that the TN does not take part in Case-matching effects. These data do not show that the wh-phrase of TFRs does take part in such effects, because *was* is compatible with both Nom and Acc. It is possible, however, to support this latter and stronger thesis by taking advantage of the fact that *was* is compatible with Nom, Acc, and Dat, but not with Gen (the Gen form being *wessen*). This is done in (91).

(91) a. Er kam mit [was ich als einen schnellen Wagen bezeichnen würde].
he came with what I as a.Acc fast car describe would
'He arrived in what I would describe as a fast car.'

b.*Ich entsinne mich [was ich als einen schnellen Wagen bezeichnen würde].
I recall Refl what I as a.Acc fast car describe would
"I recall what I would describe as a fast car.'

[10] Manfred Krifka informs me that this agreement rule applies not only in *als* small clauses, but also in comparatives where *als* has the import of 'than.'

In both subcases of (91), the TN is in the Acc Case, as required by the agreement rule illustrated in (90). (91a) is acceptable, because the TFR is a complement of the preposition *mit,* which requires Dat. (91b), on the other hand, is unacceptable because the TFR is a complement of the verb *sich entsinnen* 'to recall', which requires Gen., and as already noted, *was* is incompatible with Gen.[11]

In sum, there is evidence that Case-matching effects in TFRs operate quite differently than van Riemsdijk assumed. In particular, the TN of a TFR does **not** take part in such effects, and the wh-element **does**, something that strengthens the view that TFRs are a subvariety of SFRs.

5.5. Syntactic extraction

Wilder compares extraction possibilities out of small-clause predicates within SFRs and TFRs on the basis of data like (92a-b), draws attention to the contrast in acceptability between them, and notes that the full version of (92b) seems to have roughly the acceptability of the reduced version[12]. Wilder sees in the latter fact an important transparency effect, in particular, one which strongly supports an analysis of the TN as a CP-external head. However, the presumed transparency effect is spurious. Subjacency violations are notoriously sensitive to a variety of factors, and the fact that the parenthesized material tends to have parenthetical force may well be such a factor. What matters, however, is that TFRs are not **in general** transparent to extraction, as brought out by (92c), whose full version is distinctly worse than its reduced version. Importantly, the deviance of (92c) is comparable to that of (92d), where extraction has operated out of the *as*-introduced predicate of an object small clause selected by *describe.* The facts in (92b-d) point to the following conclusion: material internal to a TFR **can in principle affect extraction possibilities out of its TN**. This is unexpected under analyses that assign head-status to the TN, in particular, Kajita's, Wilder's and van Riemsdijk's, but is entirely expected under the analysis in (82b).

(92) a.*Who would she buy whatever object turns out to be a portrait of t?

b. Who did she buy (what seems to be) a nice portrait of t?

c. Who did she draw (*what no normal person would describe t as)
a successful caricature of t?

d.*Who did you describe [this picture as a successful caricature of t]?

[11] Substituting *wessen* for *was* also results in acceptability, because Modern German does not have Case attraction.
[12] One reviewer disagrees, indicating that the full version is degraded for him/her.

5.6. Binding Theory effects

Van Riemsdijk (1999, 2001) argues that the TN of a TFR is transparent to Case A of the Binding theory in a way in which a comparable constituent within an SFR is not, and this, on the basis of contrasts like the one between (93a) and (93b). This effect is just as spurious as the one brought up by Wilder in relation to extraction (see section 5.5.). As noted by Reinhart & Reuland (1993), strict Condition A effects are restricted to co-arguments of a predicate, which is not the case in (93a-b). As shown in (93c), SFRs are not **in general** opaque to anaphor binding, which suggests that the deviance of (93a) may be due to the hierarchical and linear intervention of a 'specified subject' (in the sense of Chomsky 1973), in particular, *you*. Be this as it may, what crucially matters in the present context is that TFRs are **not always transparent** to anaphor binding, as shown by the contrast between the reduced and full versions of (93d), where the intervening subject is *no normal individual*. This observation is unexpected under van Riemsdijk's analysis of TFRs, but entirely expected under the analysis in (82b).

(93) a.*They live in whatever location you used to refer to as each other's backyard.
b. They live in what is often referred to as each other's backyard.
c. They agreed to live in whatever can realistically be referred to as each other's backyard.
d. They live in (*?what no normal individual would describe as) each other's backyard.

5.7. The morphosyntactic facts

Not all languages use the same morphosyntactic strategy as English to convey the import of SFRs. Some use a 'doubly filled COMP' (e.g., Modern Hebrew), others use 'light headed' contructions (in particular, relatives headed by a demonstrative pronoun and with a null operator in [Spec, CP]) as an alternative to SFRs (e.g., Romanian, Polish, Modern Greek). In languages that allow both types, there are typically subtle semantics distinctions (see section 8.2.). The French counterpart of *what*-relatives is always a light-headed relative, because the free relative counterpart violates a constraint on the distribution of *quoi* (for which, see the Appendix). Now, if SFRs and TFRs are radically different constructions, there is no particular reason to expect individual languages to use the same morphosyntactic strategy in both. If, on the other hand, TFRs are merely

SFRs with the special internal configuration in (82b), one may expect languages to use the garb of SFRs to convey the import of TFRs. In fact, this is exactly what we find in many cases, as shown by the SFR/TFR and light-headed pairs from Hebrew, Romanian and French in (94)-(96) respectively; for languages that have SFRs, but not TFRs, see section 8.

(94) a. [*ma she* mad?ig et moshe] mad?ig gam oti. **[SFR]**

what that worries Acc Moshe worries also me

'What worries Moshe worries me, too.'

b. moshe gar be [*ma she* haiti meta?er ke bayit gadol be-yoter]. **[TFR]**

Moshe lives in what that would-I describe as house large most

'Moshe lives in what I would describe as an exceedingly large house.'

(95) a. *Ceea-ce* mi-ai trimis nu mă satisface. **[SFR]**

Dem-what[13] *me-have.2.Sg sent not me satisfies*

'What you sent me does not satisfy me.'

b. E vorba de o nouă şi [*ceea-ce* aş numi foarte interesantă] propunere. **[TFR]**

is talk of a new and Dem-what[12] *would.I call very interesting proposal*

'We are concerned with a new and what I would call very interesting proposal.'

(96) a. *Ce que* tu m-as envoyé ne me satisfait pas. **[SFR]**

Dem that you.Sg me-have sent Neg me satisfies not

'What you sent me does not satisfy me.'

b. Il s'agit d'une nouvelle et [*ce que* j'appellerais très intéressante] proposition. **[TFR]**

it concerns a new and Dem that I-would.call very interesting proposal

'We are concerned with a new and what I would call very interesting proposal.'

6. Uniqueness and equation-specification in the semantics of TFRs

In section 5, I presented a battery of arguments in support of the view that TFRs are **not** headed by their TN, and that their configurational structure has the properties schematically indicated in (82b). Of course, (92a-b) need to be adapted to languages that use different morphosyntactic strategies. For example, the Romanian and French light-headed relatives in (95)-(96) have a demonstrative pronoun in head position and a null operator in [Spec, CP] (as well as an overt

[13] *Ce* has been glossed as 'what', because it has this sense in many contexts. In this context, however, it is strictly a relative complementizer (for arguments, see Grosu 1994, section 8.3.).

complementizer in C). Now, the adoption of (82b) and its cross-linguistic variants as the structure of TFRs and transparent light-headed relatives imposes on me the duty to offer an account of the semantic and syntactic 'nucleus' properties of the TN. I develop such an account in sections 6 and 7. Section 6 proposes a semantics for TFRs, which serves – in conjunction with independently motivated facts and principles – as basis for an account of transparency effects in section 7.

This section is broken down in two main subsections. In section 6.1., I address the issue of uniqueness in SFRs and TFRs. In section 6.2., I inquire into the nature of the TFR-internal small clause, arguing that the transparency effects which characterize TFRs arise just in case in case (i) the small clause has equative-specificational force and (ii) the equated elements are properties.

6.1. On uniqueness

Since Jacobson 1988, there seems to be a concensus that the semantics of SFRs involves the application of a uniqueness operator to a set. As far as I can tell, this seems to be an inherent property of these constructions. In any event, I know of no attempt to derive it from independent principles, and have thus stipulated it in (82) by means of the [DEF] feature[14].

Rullmann (1995), building on Jacobson (1988, 1995), discusses both SFRs that designate individuals, such as (1a), and SFRs that designate degrees, such as (68b-c), and proposes that the appropriate uniqueness operator in such cases is the operator MAX(imality), whose output is determined by the internal structure of the set to which it applies. Thus, when applied to a set of individuals ordered by the part-whole relation, MAX picks out the unique maximal sum in the set, and when applied to a set of linearly ordered degrees, it picks out the maximal degree in the set; if there is no unique maximal individual/degree, MAX is undefined. Neither Jacobson nor Rullmann discuss SFRs that designate properties, such as (26) (repeated below for convenience).

(26) a. John is (exactly) what his mother wanted him to be (e.g., famous, a good father, etc.).

c. John can be whatever you want him to be (e.g., charming, an entertaining host, etc.).

[14] This is not necessarily the case for every relative clause construction that exhibits uniqueness effects. For example, Grosu & Landman (1998) proposed, in addressing an overtly headed construction that was discussed in Carlson (1977), that the uniqueness operator is activated in order to circumvent the impossibility of abstracting over the individual variable, which is 'pre-empted' by existential quantification. – Shimoyama (1999) proposes that uniqueness in Japanese internally-headed relatives is motivated by the fact that the internal head is quantified. She further proposes that uniqueness results from the application of the E-type strategy, the internal head serving as antecedent; for a somewhat modified view, see Grosu (2000) and Grosu & Landman (ms.).

Sharvit (1999), however, does discuss property-designating SFRs (and more generally, SFRs designating higher types than individuals) as subjects of pseudo-clefts. Basically, she views the output of the application of MAX to a set of properties as the unique property (or maximal sum of properties) that is most highly relevant in the context of the utterance, and this seems adequate for present purposes[15]. For example, the natural construal of (26a) is that John possesses a particular property (or intersection of properties) that the speaker has in mind and regards as contextually relevant. – I note in this connection that Jacobson argued persuasively that individual-designating SFRs are never universally quantified, but rather definite, and this seems to be true of property-designating SFRs as well. Thus, note that *exactly,* which occurs in the full version of (26a), is acceptable in explicitly definite, but not in explicitly universally quantified expressions, e.g., *John is exactly {that which, *everything that} his mother wanted him to be.*

In introducing the feature [DEF] as a property of C (and by percolation, of CP) in (82a), I followed Grosu & Landman (1998), who introduced in Jacobson's analysis a slight modification, motivated by the need to achieve a unified analysis of SFRs and other relative constructions with uniqueness effects. Thus, while Jacobson proposed that MAX applies only at the complex DP level and maps a set to its maximal member, Grosu & Landman proposed (essentially) that [DEF] triggers the mapping of the set designated by CP to the singleton that contains its maximal member, that the external null NP (or AP, or AdvP) intersects vacuously with this singleton (acting as the identity function), and that a null D maps the resulting singleton to its unique member.

With these preliminaries, we now turn to the semantics of TFRs.

6.2. The semantics of TFRs

In section 4.1., I stated that a TFR minus its small clause has the **essential** force of lexical intensional modifiers like *alleged(ly), presumed(ly), previous(ly), former(ly),* while also hinting at the existence of differences between the two constructions. I address these issues here, starting with a brief illustration of the distinction between intersective and intensional lexical modifiers.

[15] Sharvit (op. cit.) defines the maximality operator as in (i).

(i) For any world w and assignment g, $[MAX(\lambda u.\varphi]^{g,w}$ is the greatest element in $\{\delta \in C_{type(u),w}: [\varphi]^{w,g[u/\delta]}$ if there is one; otherwise, it is undefined.

Consider the bracketed structures in the (a) subcases of (97)-(99), where the boldfaced adjectives syntactically 'modify' the italicized nouns, and their translations in the (b) subcases; in the latter, non-essential details are ignored, and 'ATK' stands for 'was attacked by'; the full translation of the (a) subcases is provided in the (c) subcases.

(97) a. John was attacked by a [**Korean** *student*] ← **intersective adjective**

b. λx.STUDENT(x) & KOREAN(x)

c. ATK(j, λP.∃x [STUDENT(x) & KOREAN(x)])

(98) a. John was attacked by an [**alleged** *student*] ← **intensional adjective**

b. λx.∃y[ALLEGED (y, ˆ[STUDENT (x)])

c. ATK(j, λP.∃x∃y [ALLEGED (y, ˆ[STUDENT (x)])])

(99) a. John was attacked by a [**former** *student*] ← **temporal adjective**

b. λx.∃t [$t<t_o$ & STUDENT (t,x)]

c. ATK(j, λP.∃x∃t [$t<t_o$ & STUDENT (t,x)])

In (97), the adjective and the noun yield two conjoined propositions. In (98), on the other hand, the proposition whose predicate is the noun serves as argument of (a verbal counterpart of) the adjective, and in (99), the adjective existentially introduces a time point that serves as one of the noun's arguments. – To complete the illustration, I provide in (100)-(101) examples with intensional modifiers of, respectively, a predicative and an adnominal adjective.

(100) a. John is [**allegedly** *devious*]

b. λx.∃y [ALLEGED [y, ˆ[DEVIOUS(x)]]]

c. (λx.∃y [ALLEGED [y, ˆ[DEVIOUS(x)]]])(j)

(101) a. John is an [**allegedly** *devious*] spy.

b. λPλx. P(x) & ∃y [ALLEGED [y, ˆ[DEVIOUS(x)]]]

c. ∃y [SPY(j) & [ALLEGED [y, ˆ[DEVIOUS(j)]]]]

Turning now to TFRs, one may be tempted to assign to them translations comparable to those in (98)-(101). Let us try to implement this idea and see where it takes us. Consider (102)-(105), where the TFRs in the (a) subcases are roughly comparable to the bracketed structures in the (a) subcases of (98)-(101); the translations in the (b) subcases have been constructed by analogy to the corresponding (c) subcases in (98)-(101); WC stands for 'would characterize.'

(102) a. John was attacked by [what seemed to me to be a student].

b. ATK(j, λP.∃x [SEEMED (me, [STUDENT (x)]) & P(x)])

(103) a. John lives in [what was once a village].

b. LIVES(j, λP.∃x∃t [$t<t_o$ & VILLAGE (t,x) & P(x)])

(104) a. John is [what Mary would characterize as devious].

b. (λx. [WC [m, [DEVIOUS(x)]]])(j)

(105) a. John is a dangerous and [what Mary would characterize as devious] spy.

b. (λx. [DANGEROUS(x) & SPY(x) & [WC [m, [DEVIOUS(x)]]])(j)

There are, however, quite a few reasons for being less than happy with the translations just provided. First, it is not clear that these translations are fully satisfactory truth-conditionally. This is hard to detect in relation to argumental TFRs like those in (102)-(103), but it is easy to see in connection with predicative or modifying TFRs like those in (104)-(105). Take, for example, (104a). In contrast to (100a), which says that John is included in the set of individuals of whom it has been alleged that they are devious, (104a) says that John has some property which Mary (but not necessarily the speaker) would characterize as being deviousness; putting this somewhat differently, both the speaker and Mary impute some property to John (on the nature of which they may disagree) in (104a), while in (100a), the speaker imputes to John no property other than that of having had something alleged of him. Now, what (104b) says is that John belongs to the set of individuals that Mary would characterize as devious, thus failing to bring out the (possibly subtle, but real) way in which (104a) differs from (100a).

A second non-optimal aspect of the (b) subcases of (102)-(105) is conceptual in nature. As argued for in earlier sections, there are good reasons for assuming the same gross configurational properties for both SFRs and TFRs. It would thus be desirable, if tenable, to fully reduce these two constructions to a single one by also assuming that they also have the same featural make-up. But the (b) subcases of (102)-(105) include no token of MAX, and thus challenge the view (put forward in (82)) that TFRs carry the feature [DEF], and ultimately, that TFRs are SFRs.

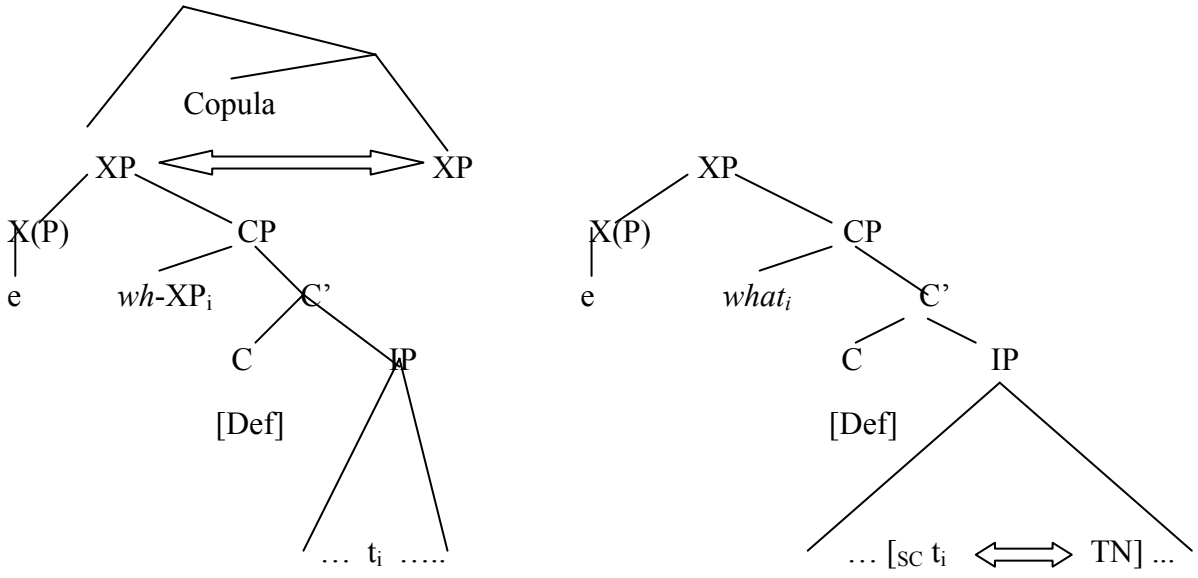
A third (potential) objection to an analysis that assumes the configuration in (82b) and translations like those in (102)-(105) is that it needs to view as definitional the fact that the wh-phrase of a TFR is restricted to *what* and its cross-linguistic counterparts.

A fourth and especially serious drawback of the kind of analysis under consideration is that it is hard to see how the transparency effects of sections 4.1.2. – 4.1.4. can be accounted for. So long as the TN is merely predicated of the trace of *what,* it is unclear why it, rather than *what,* should determine the category and logical type of the TFR, and why it should be able to satisfy the REC.

Now, I submit that the four problems just noted can be overcome by sharpening our assumptions about the semantics of the small clause or copular construction that is internal to TFRs. In principle, such constructions may be either **'strictly' predicative** or **equative-specificational** (on this point, see, for example, Rothstein 2000 and references therein). So far, we have tacitly assumed that TFR-internal SCs are strictly predicative, and this is reflected in the (b) subcases of (102)-(105). But these TFRs could in principle also be equative, as noted by Fred Landman in an unpublished manuscript. I submit that the specific effects associated with TFRs arise precisely when this option is taken, and that an equative analysis avoids all the problems that confront the translations in (102)-(105).

Note that, under an equative-specificational analysis, TFRs become a sort of converse of specificational pseudo-clefts (I am assuming the analysis of pseudo-clefts in Sharvit 1999 and Heller 1999, who build on ideas in Jacobson 1994). That is to say, while specificational pseudo-clefts exhibit an equative relation in the matrix, TFRs exhibit such a relation within the relative, as schematically shown in (106), where the equative relation is indicated by a double-headed arrow[16].

(106) **Pseudo-Clefts** **Transparent Free Relatives**



[16] The possibility that pseudo-clefts and TFRs may share some significant properties was raised in Wilder (1998), but this idea was not further pursued, and no attempt was made to base on it an account of transparency in TFRs.

In principle, equated entities may be either individuals or properties. In fact, the possibility of equating objects of higher logical type was exploited by Jacobson (1994), Sharvit (1999) and Heller (1999) in order to construct and account of the so called 'connectedness effects.' The thesis I propose to defend in what follows is that the characteristic effects associated with TFRs arise precisely when the equated entities are properties.

I now return to the data in (102)-(105), and begin by addressing (104a). As an alternative to the problematic (104b), I propose (104c), where *P* is a variable of type <s,<e,t>>.

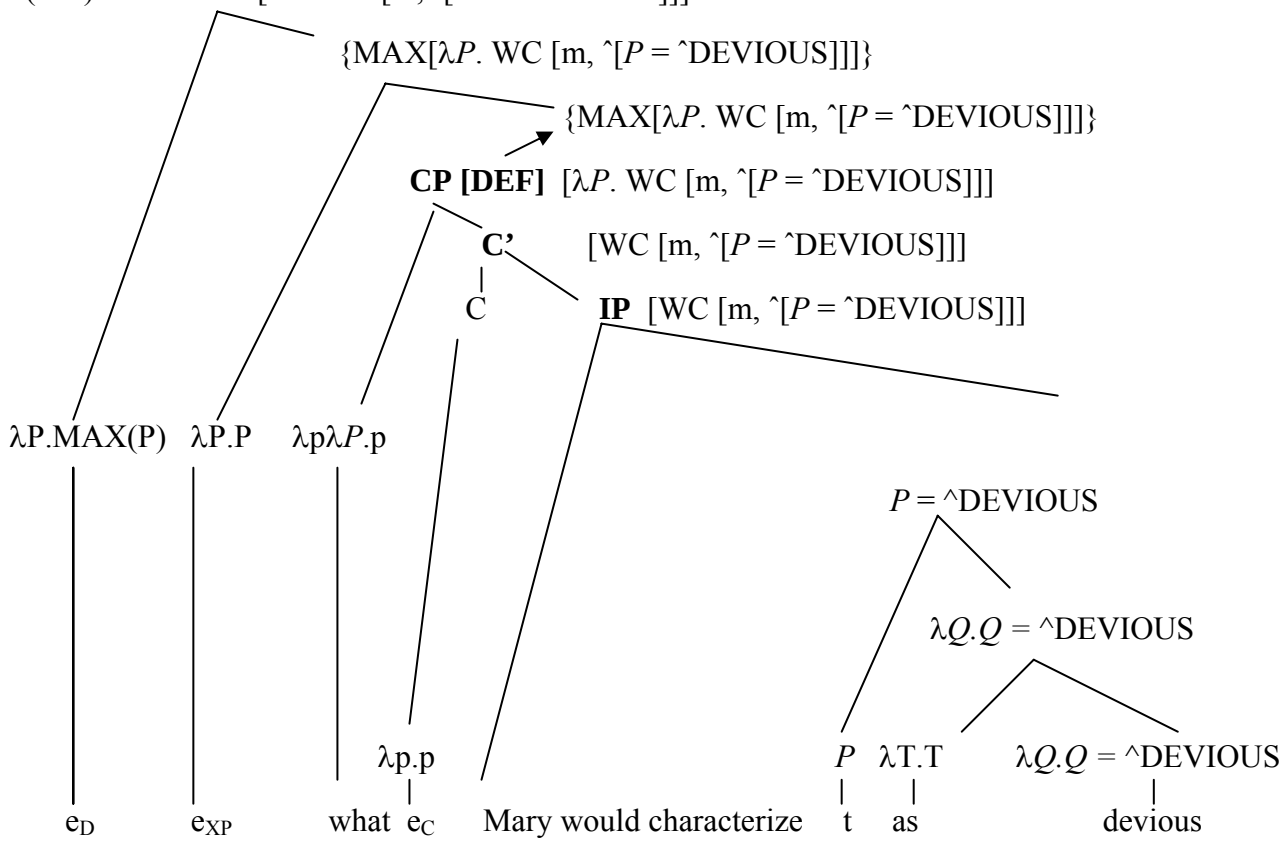
(104) a. John is [what Mary would characterize as devious].

b. (λx. [WC [m, ˆ[DEVIOUS(x)]]])(j)

c. [ˇMAX(λ*P*. WC [m, ˆ[*P* = ˆDEVIOUS]])](j)

A paraphrase of (104c) is 'John has the unique property that Mary would characterize as being the same property as deviousness', and this seems to correctly capture the import of (104a), as discussed earlier in this section. This translation thus has two immediate advantages over (104b): (i) it correctly captures truth conditions, and (ii) it makes use of MAX, thus making it possible to maintain the view that TFRs are a variety of SFRs. I provide in (107) a sketch of the crucial steps in the semantic derivation of the TFR in (104a), where T is a variable of type <<s,<e,t>>,t>.

(107)



A few clarifying remarks are in order in connection with (107), and in particular, with respect to the interpretation of the *as* small clause. To express its equative import, it is possible to build equation into the meaning of *as,* much as Sharvit (1999) did with respect to *be* in specificational pseudo-clefts, and to represent it as λYλX.Y=X, where X and Y are variables of the same type, possibly higher than individuals. The more complex representation in (107) was however chosen with a view to unify equative and strictly predicative *as* (the latter being illustrated by data like *I would characterize [John as suspicious]*), and constitutes an extension of proposals made in Partee (1987) with respect to equative *be.* Partee showed that equative constructions like *John is Bill* can be reduced to predication by lifting *Bill* into the singleton that contains it and by defining *be* as the identity function over properties. This technique can be generalized to *be* constructions that equate objects of higher type, such *brilliant is very smart* or *what John certainly is is unreliable,* and more generally to constructions that equate objects of any type, by defining *be, as,* etc., as λT.T, where T is a variable one type higher than the equated terms, and by mapping the term in predicate position into the singleton that contains it. This is in effect what was done in (107).

The null external determiner is interpreted as the definite article (a more explicit translation, provided in Sharvit 1999, is: λX[MAX(λy[X(y)])], where X is one type higher than y), and the feature [DEF] is represented only on CP, which it reaches by percolation from C, and where it gets interpreted as a function that maps a set to the singleton that contains its maximal member (see section 6.1.).

Turning now to the remaining data in (102)-(105), the translation of (105a) poses no special new problems, as can be seen in (105c). As for (102a) and (103a), I propose to analyze the TFRs in exactly the same was as in (104) and (105), with the proviso that the resulting unique property needs to be lifted into a generalized quantifier, since the TFRs function here as arguments; this extra step is accomplished by existential closure, and the results are shown in (102c) and (103c), where P and *P* stand for variables of type <e,t> and <s, <e,t>> respectively. For the sake of clarity, I also provide paraphrases in (102d) and (103d).

(105) a. John is a dangerous and [what Mary would characterize as devious] spy.

c. [λx. [DANGEROUS(x) & SPY(x) & [ˇMAX(λ*P*. WC [m, ˆ[*P* = ˆDEVIOUS]])](x)] (j)

(102) a. John was attacked by [what seemed to me to be a student].

c. ATK(j, λP.∃x [[ˇMAX(λ*P*. SEEMED [me, ˆ[*P* = ˆSTUDENT]])] (x) & P(x)])

d. John was attacked by an individual who had the unique property that seemed to me to be the 'student' property.

(103) a. John lives in [what was once a village].

c. LIVES(j, λP.∃x∃t [t<t_o & [ˇMAX(λ*P* [*P* = ˆVILLAGE])] (t,x) & P(x)])

d. John lives in a place which at some earlier time point, had the unique property that is (identical to) the 'village' property.

For completeness, I provide below translations for two TFRs whose TNs are adverbial and verbal respectively, omitting the verbs' arguments; e is a variable of type <ev(ent)>, and *R* is a variable of type <s,<ev,t>>.

(108) a. ?I spoke to him [what you might call [t privately]].

b. ∃e [SPEAK(e) & [ˇMAX [λ*R*. MAY-CALL [you, ˆ[*R* = ˆPRIVATELY]]]](e)]

(109) a. ?She was [what you might call [t laughing too loud]].

b. ∃e [ˇMAX[λ*R*. MAY-CALL [you, ˆ[*R* = ˆLAUGH-TOO-LOUD]]]](e)

In concluding this discussion of the semantics of TFRs, I wish to point out that it can also sheds light on the intuitive impression that the TN is the 'nucleus' of the construction. Observe that the equative structures posited in the (c) subcases of (102)-(105) and the (b) subcases of (108)-(109) are **'specificational'** in an especially strong sense (stronger than is typically the case in specificational pseudo-clefts): their subject is devoid of any inherent restriction, so that its entire content comes from equation with the TN. This is plausibly the reason for the effect at issue.

In sum, the semantics I have proposed correctly captures truth conditions, arguably accounts for the 'nucleus effect', permits a fully unified analysis SFRs and TFRs, and has moreover a number of additional advantages, to which I turn in section 7.

7. Accounting for the remaining properties of TFRs

7.1. The *what* restriction

In section 3.1., I noted that TFRs can only be constructed with *what,* and that this fact was regarded in earlier literature as a definitional property of TFRs. The restriction can be appreciated from a consideration of contrasts like the following:

(110) a. Bob is a boring and [{what, *who, *where} I would describe as highly irritating] person.

b. Bob can be a boring and [what(*ever) I would describe as highly irritating] person.

As far as I can see, however, the facts in (110) are derivable from independent facts and principles, and thus need not be stipulated. The contrast in the (a) subcase is derivable from inherent properties of wh-pronouns, in particular, from the fact the wh-element needs to be construable as an abstractor over inherently unrestricted properties, and that only *what* alone is compatible with this requirement (see also the discussion of (26a) in section 3.1.). The contrast in (110b) is not derivable in the same way, since *whatever* is compatible with property designata (see (26b)). It is, however arguably derivable from whatever principle disallows pseudo-clefts like those in the full versions of (111) (the incompatibility of pseudo-clefts with *-ever* forms was signaled in Jacobson 1988, 1995).

(111) a. What(*ever) John said was that Mary must leave.

b. What(*ever) John seems to be is irritating.

Apparently, there is some incoherence in trying to specify an entity whose choice is left free.

7.2. (Un)acceptability in contexts of 'indefiniteness'

In section 4.1.2., I noted that the acceptability of TFRs in the *there BE --- XP* context correlates with the acceptability of their TN in the same context, as illustrated in ((67) (reproduced below for convenience).

(67) a. There is {**a virus, the most dangerous virus imaginable, *the virus**} in this program.

b. There is [what appears to be {**a virus, the most dangerous virus imaginable, *the virus**} in this program].

This fact is derivable from the, I assume, uncontroversial assumption that equation applies to objects of the same logical type. Observe that the unstarred boldfaced nominals in (67a) are most naturally interpretable as generalized quantifiers that do not identify a unique individual (in particular, *the most dangerous virus imaginable* is interpretable as 'a virus of the most dangerous sort imaginable', the definite article binding here a degree, not an individual), while the starred nominal is most naturally construable as designating a unique individual. Correlatively, the unstarred versions of (67b) allow a construal that relies on an equation of properties, while the starred version requires an equation of individuals; the translations of the acceptable and unacceptable TFRs in (67b) are shown in (112a) and (112b) respectively.

(112) a. λQ. ∃x[[ˇMAX [λ*P*. APPEARS ˆ[*P* = {ˆVIRUS, ˆTHE MOST… }]]]](x) & Q(x)

b. MAX[λx. APPEARS [x = the virus]]

Note now that MAX picks out a unique property in (112a), and a unique individual in (112b). Since only unique individuals, but not unique properties, are disallowed in the *there BE -- XP* context, the corresponding versions of (67a) and (67b) are (in)felicitous for exactly the same reasons.

7.3. Intensionality

In section 4.1., I proposed that TFRs are infelicitous unless their TN is in the scope of an intensional or temporal operator, and suggested that sentences like the full versions of (64a) and (65a) (repeated below) owe their infelicity to the fact that they add nothing to the simpler reduced versions.

(64) a. John has become (?*what is) unbearable.

(65) a. John lives in (?*what is) {Paris, a town}.

As an anonymous reviewer observed, it is not always the case that a more complex construction is infelicitous when a simpler synonymous one is available. So, a more precise characterization of what distinguishes the full from the reduced versions is that the former, but not the latter, include a tautology, and in particular, one that is hard to 'circumvent.' Thus, the TFR in (64a) designates the unique property that is identical with ^UNBEARABLE, and one of the TFRs in (65a) designates the unique individual that is identical with Paris. But since the unique property/individual is not further specified, all this says, in effect, is that ^UNBEARABLE and Paris are identical with themselves, a patent tautology.

Note that an equation of two differently specified individuals or properties, such as *the Morning Star is the Evening Star* or *brilliant is very smart,* is not necessarily true in all worlds, e.g., there may be people unaware of these states of affairs, and even *prima facie* tautologies may sometimes be interpretable in non-tautologous ways, e.g., *boys will be boys, honest is honest,* etc. In cases like (64a) and (65a), however, no 'salvaging' factor seems to exist, so that we see, to be left with an unavoidable tautology. I suggest that this is what causes infelicity.

7.4. Matching in syntactic features

We now turn to the matching effects in syntactic number and syntactic category.

As pointed out in section 4.1.1., Wilder (1998) observed that *what* may designate a plurality (e.g., *what did you find in this drawer, books or pencils?*), without necessarily being **syntactically** plural, as illustrated in (66a) (reproduced below for convenience).

(66) a. [What I find t in this drawer] {belongs, *belong} to me. **SFR**

b. [What seems to be **a book**] {is, *are} lying on the desk. **TFR**

c. [What seem to be **books**] {are, *is} lying on the desk. **TFR**

Wilder also noted that *what* seems to agree in syntactic number with a nominal post-copular expression with which it is equated, as illustrated with interrogative constructions in (113).

(113) a. What {seems, *seem} to be the problem?

b. What {seem, *seems} to be the problems?

The crucial datum is the acceptable version of (113b), whose derivation is sketched out in (114).

(114) $[_{CP}$ What $[_{IP}$ t $[_{VP}$ t seem $[_{IP}$ t to $[_{VP}$ t be $[_{SC}$ t the problems]]]]]]

What originates in the Spec of the SC, then undergoes successive A-Movement up to the Spec of the matrix IP, **where it triggers plural agreement with *seem***. The source for syntactic plurality in *what* can only be *the problems,* since *what* is not inherently plural, as we already saw in connection with (66a). I propose that *what* is inherently unspecified for number, and acquires specification from a nominal predicate under equation; outside of this configuration, it gets a singular specification by default.

Wilder observed that what has just been said makes possible an account of (66b-c) that blames the syntactic number of the TFR on transmission from the TN via *what.* Since his interest was in finding support for the thesis that the TN is the external head of the TFR, he dismissed the facts in (66) as irrelevant. Given the analysis I am defending, however, the facts just noted are highly relevant, since they yield a straightforward account of the matching effects in syntactic number. Basically, matching is achieved thanks to two factors: (i) the inherent underspecification of *what,* and (ii) the equative configuration that enables it to acquire specification. I thus propose that the only difference between the TFRs in (66b-c) and an SFR like *whichever books you read {are, *is} full of your penciled remarks* is that in the latter case, the wh-phrase determines the number of its

FR thanks to an element it contains (i.e., *books*), while in the former case, it does so thanks to an element with which it is equated.

Given the ability of *what* to acquire specification for syntactic number through equation, it seems eminently reasonable to assume that this option exists for **all** its underspecified features. Now, *what* is underspecified for syntactic category, as was already seen in relation to (26a), and as is also revealed by question-answer pairs like *what is John, first and foremost? {A good doctor, proud of his family}*. If so, the matching effects in syntactic category illustrated in (69)-(70) receive a straightforward explanation: *what* acquires categorial specifications from the TN, and thus acquires the ability to determine the category of its FR in virtue of whatever principles enable the wh-phrases of uncontroversial SFRs to determine the category of their FR.

7.5. The Right Edge Constraint

We now turn to the REC, which is repeated below for convenience, together with the illustrative data that were exhibited in (73).

(72) **The Right Edge Constraint (REC)**

A pre-nominal AP must exhibit its adjectival head at its right edge.

(73) a. He made a [$_{AP}$ **scandalous** (*in a number of ways)] proposal.

b. He made a new and [$_{AP}$ what I'd describe as **scandalous** (*in certain ways)] proposal.

If (72) is taken to be the correct characterization of the REC, then, given (82b), the REC does not account for the facts in (73b), since the boldfaced adjective is not the syntactic head of the TFR. Rather, the head of the TFR is the null CP-external material or some proper subpart of it, and since the null material does not occur at the TFR's right edge, (72) predicts, incorrectly, that both versions of (73b) are deviant. Of course, no such problem arises for Kajita's, Wilder's and van Riemsdijk's analyses.

For exactly the same reasons, (72) falsely predicts that both (115a) and (115b) are deviant. In these Romanian data, the bracketed constructions are adjectival SFRs, and given the configuration in (82a), the null A head fails to satisfy (72) in both subcases. And just as (73b) seems to provide support for analyses that view the TN as including the TFR's lexical head, (115b) seems to provide support for analyses that view the wh-phrase as the SFR's external head.

(115) a.*Sunt dispus să fac o nouă şi [*oricât de inovativă* vrei] propunere.

I-am ready to make a new and however of innovative want.2.Sg proposal

b. Sunt dispus să fac o nouă şi [*oricât* vrei *de inovativă*] propunere.

I-am ready to make a new and however want.2.Sg of innovative proposal

'I am ready to make a new proposal, and however innovative you may want it to be.'

To make explicit what goes on here, the italicized phrase in (115a) is an extended adjectival projection (in the sense of Grimshaw 1991), which is functionally headed by a degree word whose AP complement is embedded in what looks like a (semantically vacuous) PP; this construction is analogous in its internal make-up to nominal extended projections like the French *combien de livres* 'how many books', or the English *a number of books (**were** found).* What is special to the Romanian construction is that the PP may be extraposed, and when the extended adjectival projection is the wh-phrase of an SFR, as in (115), PP-extraposition can in principle place the PP-internal A at the right edge of the SFR. This is precisely what happens in (115b), and this state of affairs is apparently sufficient to ensure acceptability. Furthermore, if the lexical adjective in (115b) is replaced with one that allows a complement, say, *interesantă (pentru voi)* 'interesting (for you.PL)', the result is acceptable just in case the adjective's complement is not present. – In short, it looks like the facts in (115) support a wh-headed analysis of SFRs, and that those in (73) support a TN-headed analysis of TFRs.

However, this conclusion follows only if the REC is formulated as in (72), and there is evidence that this formulation is too strong. To see this, consider the following data from English, German and Dutch, where the adjectival head (in boldface) fails to satisfy (72). Certain AP-final constituents, chosen 'with malice aforethought', have been italicized.

(116) a.*A [**fast** *to a sufficient extent*] car **← English**

b. A [**fast** *enough*] car

(117) a.*Ein [**schnell-e**r *genug*] Wagen **← German**

a fast -Agr enough car.Masc.Sg.Nom.

b.*Ein [**schnell** *genug-er*] Wagen

a fast enough-Agr car.Masc.Sg.Nom.

(118) a.*Een [**snell-e** *genoeg*] auto **← Dutch**

a fast-Agr enough car.non-Neuter

b.*Een [**snel** *genoeg-e*] auto

a fast enough-Agr car.non-Neuter

c. Een [**snel** *genoeg*] vliegtuig

a fast enough plane.Neuter

(119) a. The [**fastest** *possible*] car ← **English**

b* Der [schnellst-e möglich] Wagen

the fastest-Agr possible car.Masc.Sg.Nom.

c. Der [**schnell***stmöglich-e*] Wagen ← **German**

the fastest-possible-Agr car.Masc.Sg.Nom.

d.*Dat [**snelst-e** *mogelijk*] auto ← **Dutch**

the fastest-Agr possible car.non-Neuter

e. Dat [**snelst** *mogelijk-e*] auto

the fastest possible-Agr car.non-Neuter

(120) a.*As [**fast** as *possible*] a car ← **English**

b. Ich bitte um die [so **schnell** wie Ihnen *möglich-e*]

I ask for the as fast as to-you possible-Agr

Beantwortung meines Briefes ← **German**

answering my.Gen letter.Gen

c. Een [zo **snel** als *moegelijk-e*] auto ← **Dutch**

an as fast as possible-Agr car.non-Neuter

An immediate observation is that **not all** of the above examples are deviant, and this indicates that (72) may well be too strong. Now, the contrast in (116a) may be brought in line with (72) by assuming that the italicized element, when lexical (as in the (b) subcase), adjoins to the boldfaced one and forms a complex A, so that (72) is satisfied by the complex A. However, the facts in (117)-(120) show that this is not sufficient when agreement is morphologically realized. (117a) and (118a) show that agreement markers on a non-final subelement of an AP-final complex head lead to ungrammaticality. As for (117b) and (118b), they are ungrammatical because the italicized words are uninflectable according to standard grammars, but J. Bayer and A. Jäger inform me that data like (117b), in contrast to data like (117a), are nonetheless heard in speech all the time; this suggests that speakers are re-interpreting *genug* as an adjective in order to satisfy the REC, and that this

constraint, in the situations with overtly realized morphology, needs to be satisfied by final **words**, not just by final (possibly complex) **heads**. The Dutch and German data in (119)-(120) strongly confirm this hypothesis. Note that all the data in these two sets of examples end in an adjective that is **not** the head of the AP (*possible* is clearly not predicated of a car, but rather of an elliptical proposition with the rough content of 'for a car to be x-fast'). Nonetheless, the fact that the italicized adjectives are somehow allowed by the grammars of these languages to bear the AP's agreement morphology turns out to be sufficient for acceptability. (120b-c) are especially important, since the boldfaced adjectives are followed by multi-word phrases, which thus cannot be assumed to be adjoined to them. – The facts examined so far suggest that (72) needs to be relaxed to something like (121).

(121) A pre-nominal attributive AP must end in an X^o element that agrees with it; in the absence of overt agreeing morphology, the agreement requirement applies to (abstract) syntactic features.

(121) allows (119c,e)-(120b-c) and disallows (119b,d) because morphological agreement takes precedence over syntactic agreement, and the bearer of morphological agreement is a **word**, not a complex head. (116b) and (118c) are allowed because agreement concerns abstract syntactic features (in particular, categorial ones), and such agreement targets syntactic heads, which happen to be complex in these cases. (120a) is excluded because *possible* is neither part of the syntactic head nor a bearer of morphological agreement. – To avoid misunderstanding, I note that agreement is assumed to refer to the outcome of some grammatical process, and not to mere accidental matching of features, otherwise we would wrongly predict that (136a) is acceptable.

Now, observe that if the REC is characterized as in (121), the facts in (115b) and (73b) are straightforwardly accounted for on the basis of the configurations in (82a) and (82b) respectively. The reason is that SFRs automatically agree with (the head of) their wh-phrase in syntactic features, and that TFRs also agree with (the head of) their TN (via agreement of the latter with the SC subject, as shown in section 7.4.). The benefits of (121) also extend to the light-headed transparent relatives in (95b) and (96b), which do not fall under (72), and which become ungrammatical if the adjective at the right edge of the bracketed phrase is followed by a complement (demonstration omitted).

For completeness, I wish to stress two further points. First, due to the specification 'attributive' in the statement of (121) (and (72)), the generalization concerns only the TFR, and not its TN. Second, one may wonder how constructions like (122) can be licensed, since the boldfaced adjective belongs to the class that is usually thought of as 'strictly attributive' (other such adjectives being, for example, *former, alleged, possible* and *mere*), and it nonetheless occurs as a predicate within the TFR-internal small clause. The answer to this question is that, while such adjectives are indeed excluded from the predicative position in strictly predicative constructions, they are not excluded from that position in equative constructions, as revealed by the contrast between (123) with (124). In view of this contrast, I submit that the acceptability of data like (122) provides especially strong support for the thesis that the TFR-internal small clause is equative, not strictly predicative.

(122) He is a dubious and [what most people might call **false**] prophet.

(123) *This prophet is {former, false, quasi, pseudo, mere}.

(124) Alleged is presumed; pseudo is false; former is earlier.

8. Languages with SFRs and without TFRs

The analysis of transparency in TFRs that I have argued for rests on the following pillars: (i) a gross syntactic structure indistinguishable from that of uncontroversial SFRs (see (82)); (ii) an equative internal predication whose predicate constitutes the only source of restriction/specification for the chain footed in subject position, (iii) a chain which is furthermore underspecified with respect to logical type and syntactic features, in particular, categorial ones; (iv) CP-external material that is also underspecified in the sense of (iii). Note that (iii)-(iv) make no reference to the overt/null status of the relevant material, and thus also extend to light headed constructions like those in (95)-(96), which exhibit a null-headed operator chain and an overt CP-external head. These factors jointly ensure that the syntactic and semantic properties present in the TN, but for which the CP-external material and the CP-internal operator-headed chain are underspecified, are conveyed to the TFR, and thus yield an account of the feeling that the TN is the syntactic and semantic 'nucleus' of the TFR, even though it is not its syntactic head according to any syntactic theory known to me.

A prediction of what has just been said is that languages which have SFRs and can satisfy conditions (ii)-(iv) will also exhibit TFRs. Put somewhat differently, if we find a language with

SFRs and no TFRs, we expect the absence of TFRs to be traceable to the non-satisfaction of (at least one of) the conditions (ii)-(iv). In this section, I examine a number of languages of the kind just referred to, and show that in at least some of them, this expectation is demonstrably fulfilled. I also note residue of languages that are consistent with the prediction at issue, but in which the absence of one of the factors in (ii)-(iv) is not, as far as I know, demonstrable, and which thus constitute open problems that require further research.

8.1. Languages with external heads that lack underspecification

A language in which the absence of TFRs appears traceable to the non-satisfaction of (iv) is Korean[17]. Korean has internally-headed relatives that also exhibit a light external head, and whose semantics arguably involves MAX (the arguments for this view are parallel to those adduced in Hoshi 1995 and Shimoyama 1999 in relation to structurally parallel internally-headed relatives in Japanese; see footnote 13). Furthermore, just as in Japanese, the internal head may be phonologically null, which results in structures comparable to the French and Romanian light headed constructions illustrated in (95)-(96). These constructions may be used as subjects of pseudo-clefts, and more generally can function as counterparts of SFRs and of light-headed relatives like those in (95a) and (96b) *modulo* the linear order of CP and the light head; an illustration is provided in (125a).

(125) a. [[*Ø* coki cäksang-wi-e iss-nin] *kôs*] tämun-e na-nin manhîn
there table-on-Loc be-Mod thing because-of I-Top much
cichul-îl ha-yôss-ta **[SFR]**
expenditure-Acc make-Past-Tense
'What is (lying) over there on the table has cost me a lot of money.'

b. John-i [[Ø kwaca katha poi-nin] kôs]- îl môk-ko.iss-ta **[TFR?]**
John-Nom cake like seem-Mod thing Acc eat-Progr be-Tense
'John is eating what seems to be a cake.'

Does Korean also have TFRs? Data like (125b) might seem to suggest a positive answer. However, *kôs*-constructions comparable to (26a) and (95b)-(96b) are prominently lacking, and so

[17] I am grateful to So-Young Yun-Roger for many hours of informant work and for illuminating discussion of aspects of Korean grammar.

are counterparts to Romanian and French data like (126)-(127), where light-headed relatives function as appositives with a **property**-designating antecedent.

(126) a. Maria e {un geniu, deşteaptă}, ceea-ce Ion n-a fost niciodată.
Maria is a genius clever that-what Ion Neg-has been never
'Maria is {a genius, clever}, which Ion has never been.'

b. Maria plânge, ceea-ce Ion n-ar face niciodată.
Maria cries that-what Ion Neg-would do never
'Maria is crying, which Ion would never do.'

(127) a. Marie est {un génie, brillante}, ce que Jean n'a jamais été.
Marie is a genius brilliant Dem-that Jean Neg has ever been
'Marie is {a genius, brilliant}, which Jean has never been.'

b. Marie est en train de pleurer, ce que Jean ne ferait jamais.
Marie is in course of cry Dem-that Jean Neg would-do ever
'Marie is crying, which Jean would never do.'

Moreover, my informant tells me that (125b) appears to lack an indefinite construal of the TFR, a rough paraphrase being *John is eating {the thing, *something} that seems to be a cake.* This points to the conclusion that (125b) cannot rely on an equation of properties, which permits existential closure (as in (102)-(103)), but only on an equation of individuals (as in (112b)) or on strict predication. In other words, (125b) cannot receive a typical TFR construal, and the reason for this is that *kôs* seems unable to designate anything other than individuals.

In short, transparency appears to be blocked by the fact that the CP-external material fails to satisfy condition (iv) above (i.e., underspecification in logical type).

8.2. Languages that fail to license equation within FRs

In some languages, SFRs seem to be used only with an import close to that of English *–ever* SFRs. Under such circumstances, the kind of equative configuration that constitutes a necessary condition for TFRs (see condition (ii) above) cannot arise (on this point, see section 7.1.), and TFRs can thus not be formed. A language of this type seems to be Russian, which allows explicit counterparts to *–ever*-SFRs, as shown in (128a), or SFRs with implicit free-choice import, as in (128b), but which requires an explicit external head when a specific import is intended, as shown in

(128c) (I am grateful to Dimitri Levinson and Helen Trugman for providing these data). As expected, TFRs are impossible, and their import can only be conveyed by paraphrase.

(128) a. Mila vypolnit čto by ty ne poprosila.

Mila do.Fut.3.Sg what Subj you not ask

'Mila will do whatever you ask.'

b. Ya kuda xočeš peresjadu.

I where want.2.Sg change-seat.Fut.1.Sg

'I will sit wherever you want me to.'

c. Ya sjadu *(tam) gde vy sjadete.

I sit.Fut.1.Sg there where you.PL sit.Fut.2.Pl

'I will sit (in the precise place) where you sit.'

A variation on this state of affairs is found in Romanian, which has both SFRs and light-headed relatives, but with distinct ranges of meanings: SFRs exhibit a strong tendency towards free choice construal, light-headed relatives are preferentially used with specific import, as illustrated in (129).

(129) a. Fac {??ceea-ce, ce} faci şi tu, orice ar fi.

I-do that-czer what do and you whatever would be

'I'll do what you do, whatever it is.'

b. {Ceea-ce, ??ce} se află acum pe masă îmi displace.

that-czer what Refl finds now on table me displeases

'What is lying right now on the table displeases me.'

Not unexpectedly, SFRs are unacceptable both as subjects of pseudo-clefts and as TFRs, while light-headed constructions are fine in both situations, as shown in (130).

(130) a. {Ceea-ce, *?ce} Maria cu siguranță nu e e(ste) inteligentă.

that-czer what Maria with certainty not is is intelligent

'What Maria certainly isn't is intelligent.'

b. E vorba de o nouă şi [{ceea-ce, *?ce} aş numi foarte interesantă] propunere.

is talk of a new and that-czer what would.I call very interesting proposal

'We are concerned with a new and what I would call very interesting proposal.'

8.3. FRs with null heads and null [Spec, CP]

Some languages (e.g., Chinese, Turkish, the Dravidian languages) exhibit SFRs in which both the CP-external head and [Spec, CP] are null; an illustration from Chinese is provided in (131).

(131) [[[ni mai e] de] e] …
you buy Modifier-marker
'(That which) you bought'

These structures exhibit, in Chinese and Turkish, exactly the behavior of the Korean light-headed relatives (see section 8.1.). That is to say, they are usable as arguments with clear definite import, and they cannot be used with the import of (26a) or as TFRs. I do not know whether this is an accidental property of the two languages I have investigated, or a general property of languages with the typological properties described above. In either case, I do not know why the combination of two null elements should block a property designation, as seems to be the case, and I leave this as an open problem for further research.

9. Summary of results

This paper has presented evidence that both SFRs and TFRs are multi-categorial and share (at least) two properties: (i) they consist of a null category with an overt CP sister, and (ii) the semantics of CP involves a Maximalization operation whose effects are reflected in the meaning of the complex XP. The special transparency effects associated with TFRs are traceable to (a) an equative-specificational internal small clause (b) whose subject designates a property, and to (c) the syntactic and semantic underspecification of the elements via which the syntactic-semantic content of the small clause predicate is 'conveyed' to the complex XP.

APPENDIX

The goal of this appendix is to strengthen previously provided argumentation in support of the view that in relative constructions with a missing P, the overt P is a sister of the immediately following 'small DP.' That is to say, that in (28)-(29), reproduced below as (132)-(133), the (a) subcases contrast in constituency with the (b) subcases in the way indicated by bracketing. This

view is distinct from the one in Larson (1987), where it is proposed that the constituency facts in the (a) subcases are parallel to those in the (b) subcases.

(132) a.%I will live [[in every city] that you live].

b. I will live [in [every city that you live in]].

(133) a. I will write [[with whichever pencil] you write].

b. I will write [with [whichever pencil you write with]].

The possibility that (133a) might have the same kind of constituency as (133b) was considered and rejected by Bresnan & Grimshaw (1978) on the basis of Topicalization data like the following:

(134) a. With whichever pencil you write, I will write.

b. Whichever pencil you write *(with), I will write with.

Such paradigms can also be constructed in relation to data like (132), and also by using Clefting and Pseudo-Clefting in addition to Topicalization (see Grosu 1996 for illustration).

Larson (1987), assuming that the ACD approach to the missing-P phenomenon that was critiqued in section 3.2.1. is conceptually desirable, proposed an account of (134b) that relied on the bracketing in (133b). In Grosu (1996), I argued that this alternative account is problematic, and offered additional argumentation based on French and German data in support of the bracketing in the (b) subcases of (132)-(133). Larson (1998 and p.c.) pointed out certain gaps in the arguments put forward in my 1996 paper, and – assuming the conceptual superiority of his ACD approach – offered alternative accounts of the facts on which my arguments rested.

In this appendix, I endeavour to eliminate some of the gaps in my earlier arguments, and also discuss Larson's counterproposals when necessary. I also bring up a kind of fact not mentioned in Grosu (1996), which yields further support for the analysis I am defending.

Bresnan and Grimshaw's constituency tests

The way in which Larson (1987) proposed to handle the reduced version of (134b) under the kind of configuration in (133b) was by modifying May's account of ACD as follows: (i) QR operates cyclically from node to node, and (ii) the copying operation that reconstructs the elliptical P is strictly local, being allowed only at the lowest level where the ellipsis is no longer antecedent-contained; since Topicalization, unlike QR, takes places before LF, step (ii) cannot be carried out in

the reduced version of (134b). Larson proposed that this modification is independently needed to handle data like (135), which are *prima facie* comparable to the reduced version of (134b).

(135) a. *Everyone that Mary did, Bill suspected.

b. *Whoever Eunice did, Bill saw.

There are two problems with this approach, once conceptual and one empirical. The conceptual problem (not pointed out in Grosu 1996) is that the locality condition imposed by Larson on VP-copying divorces it from the copying process that is operative in VP ellipsis elsewhere, for example, in the various subcases of (31); this weakens May's account of antecedent-contained elliptical VPs by removing the independent motivation from one of its two basic ingredients, and is thus conceptually undesirable. The empirical problem (pointed out in Grosu 1996), is that (135a-b), but not the reduced version of (134b), can be rendered acceptable by suitable lexical and intonational manipulations, as shown in (136).

(136) a. Everyone that Mary did, Bill {also suspected, didn't suspect}.

b. Whoever Eunice did, Bill {saw {as well, too}, didn't see}.

Larson (p.c.) objected that my argument cannot go through without an account of the contrasts between (135), and (136) and between (135) and (137). I offer such an account now.

(137) a. Bill suspected everyone that Mary did.

b. Bill saw whoever Eunice did.

One thing that differentiates (135) from (137) is that in the former, but not in the latter, the complex DP and the remainder of the matrix form two separate utterances, each with its own sentence-stress pattern, and, correlatively, with its own theme-rheme structure. This kind of division into separate utterances is found independently of antecedent-containment, for example, with sentence-modifying adverbial clauses, which are arguably not part of VP; this is illustrated in (138).

(138) *{Since, because} Mary did, Bill slept.

Now, (135a-b) are unacceptable only with certain sentence stress patterns, for example, with those in (139) and (140). With the pattern in (141), however, acceptability is substantially improved, and with the addition of focused elements, such as *also, too, as well,* negation, etc., acceptability is completely restored, as was seen in (139); I indicate the stress patterns that apply to the two versions of (136a) in (142-(143).

(139) a. *Everyone that Máry did, Bill suspécted.

b. *Whoever Eúnice did, Bill sáw.

(140) a. *Everyone that Mary díd, Bill suspécted.

b. *Whoever Eunice díd, Bill sáw.

(141) a. ?Everyone that Máry did, Bíll suspected.

b. ?Whoever Eúnice did, Bíll saw.

(142) a. Everyone that Máry did, Bill álso suspected.

b. Whoever Eúnice did, Bill suspected as wéll.

(143) a. Everyone that Mary díd, Bill dídn't suspect.

b. Whoever Eunice díd, Bill dídn't see.

Similarly, the acceptability of (138) depends on stress patterns and focused items in just the same way, as shown by the parallelism between (139)-(143) and (144)-(148).

(144) *Since Máry did, Bill slépt.

(145) *Since Mary díd, Bill slépt.

(146) ?Since Máry did, Bíll slept.

(147) Since Máry did, Bill álso slept.

(148) Since Mary díd, Bill dídn't sleep.

I suggest that the deviance (or rather, infelicity) of (139)-(140) and (144)-(145) is due to the fact that the sequence of two utterances that compose them do not form an informationally coherent whole. Thus, (139) and (144), which exhibit the 'unmarked' stress pattern (in the sense of Cinque 1993), seem to contrast a subject with a verb, which is incongruous. In (140) and (145), unless the ellipsis purports to refer to something in the preceding discourse (a reading not under consideration here), the contrast seems to be between the content of a verb and itself, which makes little sense. In (141) and (146), on the other hand, contrasting two subjects does make sense, and (142) and (147), which express the same thing, are presumably even better because they make the intended import of the preceding two examples more explicit. Finally, (143) and (148) contrast two opposing truth values, which makes perfect sense. I note in passing that the facts just noted bear a certain similarity to facts like those in (149), where the two juxtaposed utterances are coordinated, and which have often been noted in the literature. (149a) exhibits incongruous foci of contrast, much like (139)-(140) and (144)-(145), (149c) exhibits a sensible contrast, comparable to the ones in (143) and

(148), and in 149b), the focused particle *too* implies a sensible contrast between the actual state of affairs, in which Mary did what Bill did (i.e., sleep two hours), and other possible states of affairs, in which Mary may have done something different.

(149) a.*Bill slept two hóurs, and {Máry did, Mary díd}.

b. Bill slept two hóurs, and Mary did, tóo.

c. Bill slept two hóurs, but Mary dídn't.

In short, the degraded status of (135) seems to be due to pragmatic incoherence, not to the violation of syntactic principles, and Larson's hypothesis that VP ellipsis reconstruction is subject to a locality constraint **in ACD contexts only** may be laid to rest, in view of both its conceptually unappealing status and its empirical inadequacy.

The distribution of French *quoi*

The argument based on French data exploited an interesting constraint on the distribution of the pronoun *quoi* 'what'. Basically, it was pointed out in my 1996 article that interrogatives and SFRs in which *quoi* stands alone in [Spec, CP] of a finite clause are deviant, but when *quoi* is accompanied by another element in [Spec, CP] or the clause is non-finite, the result is fine (see my 1996 paper for illustration). In addition, the following contrast was pointed out:

(150) a.*Jean aura toujours peur **de quoi** fait peur à son grand-frère.

Jean will-have always fear of what makes fear to his big brother

'Jean will always be scared of what scares his big brother.'

b. Jean s'asseoit toujours **sur quoi** sa femme veut se coucher.

Jean Refl sits always on what his wife wants Refl sleep

'Jean always sits on what his wife wants to lie down.'

The deviance of (150a) is expected, since the boldfaced elements occur in the configuration indicated in (151a), so that *quoi* stands alone in [Spec, CP] (of a finite clause). The acceptability of (150b) is surprising if the boldfaced elements occur in the configuration in (151b), but entirely expected if they occur in the configuration in (151c).

(151) a. [$_{PP}$ **de** [$_{CP}$ **quoi** fait peur à son grand-frère [$_{DP}$ t]]]

b. [$_{PP}$ **sur** [$_{CP}$ **quoi** sa femme veut se coucher [$_{PP}$ t]]]

c. [$_{CP}$ [$_{PP}$ **sur quoi**] sa femme veut se coucher [$_{PP}$ t]]

Larson (1998) proposed that it is possible to account for the contrast between (150a) and (150b) in terms of the common structural analyses indicated in (151a) and (151b) if the distribution of *quoi* is characterized as follows:

(152) *Quoi* may not bind a variable in a finite clause at Spell-Out.

Observe that *quoi* binds a trace in (151a), but not in (151b), where its trace is assumed to be reconstructed at LF only, so that (152) is adequate with respect to the data at issue. In fact, (152) also deals adequately with data like (153), where the trace of *quoi* is visible at Spell-Out in the full version and invisible in the reduced version.

(153) Je sais qu'il veut vendre quelque chose, mais je ne sais pas *quoi* (*il veut vendre).

I know that he wants to-sell some thing but I Neg know not what he wants to-sell

'I know he wants to sell something, but I don't know what (he wants to sell).'

Nonetheless, I think (152) is on the wrong track in seeking to characterize the distribution of *quoi* in terms of its **long-distance** binding properties, and that the correct characterization needs to refer to the **local** context of *quoi*. In this spirit, I offer the following revised condition on the distribution of *quoi,* which deals adequately with (150) given the structures in (151a,c):

(154) *Quoi* may not exhibit a finite clausal sister in superficial representation.

(154) can also deal with (153), since the elliptical clause may be assumed to bear no specification for finiteness. At this point, both (152) and (154) seem to be empirically adequate. It is possible, however, to distinguish between them by considering data like (155b-c).

(155) a.**Quoi* pourrait nous nuire?

what can-Cond us harm

'What could harm us?'

b. Je ne sais plus $quoi_i$ {supposer, imaginer} que [Jean aimerait recevoir t_i].

I Neg know more what suppose.Inf imagine.Inf that Jean like.Cond get

'I no longer know what to {assume, imagine} that Jean would like to get.'

c.*Je ne sais plus $quoi_i$ Marie s'imagine que [Jean aimerait recevoir t_i].

I Neg know more what Marie Refl imagines that Jean like.Cond get

'I no longer know what imagine that Jean would like to get.'

The deviance of (155a) shows that sentences in the conditional mood count as finite. In (155b), the trace of *quoi* is contained within a conditional clause, but the sister of *quoi* is non-finite; (155c) is

essentially like (155b), except that the sister of *quoi* is finite. The contrast in acceptability between (151b) and (151c) shows clearly that finiteness is locally relevant with respect to *quoi,* but plays no role with respect to the trace of *quoi.* In conclusion, (154) wins over (152), and correlatively, (151c) wins over (151b).

German contraction and overt copies of movement

In Grosu (1996), I argued for a sisterhood relation between the overt P and the adjacent wh-phrase in missing P SFRs on the basis of German data like the following:

(17) Die armen Hausfrauen stürtzten sich {auf was, *worauf} sie nur kaufen konnten.

the poor housewives threw Refl on what whereon they only buy could

'The poor housewives pounced on whatever they could buy.'

(156) Die armen Hausfrauen stürtzten sich {auf was, worauf} sie sich nur stürtzen konnten.

the poor housewives threw Refl on what whereon they Refl only throw could

'The poor housewives pounced on whatever they could pounce.'

These data are parallel to the French data in (150a-b) in that both sentences exhibit a P followed by a w-pronoun, but the second sentence only exhibits a missing P. I pointed out that if one assumes different structural relations between P and the w-pronoun in the two examples, it becomes in principle possible to account for the observed difference in contraction options in terms of the different structures, and in keeping with this tack, I suggested that P and the w-pronoun are 'too far' apart to satisfy the locality conditions on contraction. Larson (1998) correctly observed that the locality conditions on extraction had not been made explicit. This deficiency was, however, remedied in section 2.3., where it was argued that contraction applies optimally to a P and its complement, and marginally to a P and the head of its complement. Under the structures I proposed to assume for data like (17) and (156), the w-pronoun is the sister of P in (156), but neither the sister nor the head of the sister of P in (17). Accordingly, the argument for the sisterhood of P and the w-pronoun in German now rests on an explicit characterization of the locality conditions on contraction.

Before concluding, I wish to bring up an additional body of facts that was not mentioned in Grosu (1996). Josef Bayer informs me than in colloquial German, it is perfectly common to find instances of w-Movement with (uninterpreted) overt copies in intermediate [Spec, CP]'s, both in

questions and in SFRs, as illustrated in (157a-b) respectively. Importantly, such constructions are also found with w-Movement that pied-pipes a preposition, as shown in (157c-d).

(157) a. **Wen** glaubst du **wen** Maria liebt?

who.Acc think you who.Acc Maria loves

'Who do you think that Maria loves?'

b. Ich kenne [**wen** du glaubst **wen** Maria liebt].

I know who.Acc you think who.Acc Maria loves

'I am acquainted with (the one) who you think that Maria loves.'

c. **Mit wem** glaubst du **mit wem** er sprechen will?

with whom think you with whom he speak wants

'With whom do you think that he wants to speak?'

d. Ich spreche [**mit wem** du auch denkst **mit wem** ich sprechen will].

I speak with whom you ever think with whom I speak want

'I speak with whoever you think that I want to speak.'

Such constructions, which are viewed in the literature as supporting a cyclic analysis of wh-Movement, also support the analyses of nominal and prepositional SFRs I have argued for, since the intermediate overt copies in the (b) and (d) subcases are just what one may expect under the assumption that the wh-phrases in the SFR's highest [Spec, CP] are DPs and PPs respectively. In contrast, the analysis in Bresnan & Grimshaw (1978) and Larson (1987) are hard put to account for the intermediate wh-phrases, since the leftmost wh-phrases are viewed as base-generated clause-externally. Larson (1998) considers an alternative analysis of SFRs, in which their wh-phrase achieves a clause-external position through movement from within the relative. If the movement is moreover assumed to be cyclic, (157b) can be accounted for, but (157d) is still an embarrassment, since the leftmost token of *mit* is assumed to be base-generated outside the SFR, and there is thus no obvious reason for the presence of an additional token of *mit* in the intermediate [Spec, CP].

Summarizing, there are (at least) four reasons for viewing the overt P in missing-P relatives as a sister of the adjacent small DP.

BIBLIOGRAPHY

Åfarli, Tor. 1984. *Relativization, prepositions and parasitic gaps,* unpublished Ph.D. thesis, University of Trondheim, Norway.

Bach, Emmon and Robin Cooper. 1978. 'The NP-S analysis of relative clauses and compositional semantics', *Linguistics and Philosophy* 2, 145-150.

Baker, Mark. 1988. *Incorporation: A theory of grammatical function changing.* University of Chicago Press, Chicago.

Baker, Mark. 1996. *The Polysynthesis parameter.* Oxford University Press, Oxford.

Bayer, Josef. 1984. 'COMP in Bavarian syntax', *The Linguistic Review* 3, 209-274.

Bresnan, Joan Wanda and Jane Grimshaw. 1978. 'The syntax of free relatives in English', *Linguistic Inquiry* 9, 331-391.

Carlson, Gregory. 1977. 'Amount Relatives', *Language* 53, 520-542.

Chomsky, Noam. 1973. 'Conditions on Transformations', in S. Anderson and P. Kiparsky (eds.), *A Festschrift for Morris Halle,* Holt, Rinehart and Winston, New York.

Cinque, Gugliemo. 1993. 'A null theory of phrase structure and compound stress', *Linguistic Inquiry* 24, 239-297.

Grimshaw, Jane. 1979. 'Complement selection and the lexicon', *Linguistic Inquiry* 10, 279-326.

Grimshaw, Jane. 1991. 'Extended Projection', ms., Brandeis University.

Groos, Anneke and Henk van Riemsdijk. 1981. 'Matching effects in free relatives: a parameter of core grammar', in A. Bellettii, L. Brandi and L. Rizzi (eds.), *Theory of Markedness in Generative Grammar*, Scuola Normale Superiore, Pisa.

Grosu, Alexander. 1989. 'Pied Piping and the Matching Parameter', *The Linguistic Review* 6, 41-58.

Grosu, Alexander. 1994. *Three studies in locality and Case,* Routledge, London.

Grosu, Alexander. 1996. 'The proper analysis of "missing P" free relative constructions', *Linguistic Inquiry* 27, 257-293.

Grosu, Alexander and Fred Landman. 1998. 'Strange relatives of the third kind', *Natural Language Semantics* 6, 125-170.

Grosu, Alexander. 'Modal existential constructions', unpublished manuscript, Tel Aviv University.

Harbert, Wayne. 1983. 'On the nature of the Matching Parameter', *The Linguistic Review* 2, 237-284.

Heim, Irene. (1987) 'Where does the definiteness restriction apply? Evidence from the definiteness of variables', in E. Reuland and A. ter Meulen (eds.), *The representation of (in)definiteness, The* MIT Press, Cambridge, Mass.

Heller, Daphna. 1999. *The syntax and semantics of specificational pseudoclefts in Hebrew,* unpublished M.A. thesis, Tel Aviv University.

Hirschbühler, Paul and Maria-Luisa Rivero. 1983. 'Remarks on free relatives and matching phenomena', *Linguistic Inquiry* 14, 505-519.

Izvorski, Roumyana. 1998. 'Non-indicative WH-complements of existential/possessive predicates', in P.N. Tamanji and K. Kusumoto (eds.), *NELS* 28, 159-173.

Izvorski, Roumyana. 2000. 'Free adjunct free relatives', Billerey & Lillehaugen (eds.), *WCCFL 19 Proceedings,* 232-245.

Jacobson, Pauline. 1988. 'The syntax and semantics of free relatives', paper presented at the LSA Winter Meeting, New Orleans.

Jacobson, Pauline. 1994. 'Binding connectivity in copular sentences', in M. Harvey and L-Santelmann (eds.), *Proceedings of SALT IV,* Cornell University, Ithaca, 161-178.

Jacobson, Pauline. 1995. 'On the quantificational force of English free relatives'. in E. Bach, E. Jelinek, A. Kratzer and B. Partee (eds.), *Quantification in natural languages*, vol. 2. Kluwer, Dordrecht.

Jäger, Agnes. 2000. *Unterspezifikation am Beispiel des Pronomens* was*. Zur Grammatik eines w-Elements*. Unpublished M.A. Thesis, Friedrich-Schiller Universität, Jena.

Kajita, Masaru. 1977. 'Towards a dynamic model of syntax', *Studies in English Linguistics* 5, 44-66, Asahi, Tokyo.

Landman, Fred. (2001) Argument-predicate mismatches and the adjectival theory of indefinites. To appear in M. Coene and Y. D'Hulst (eds.), *The Structure of NP/DP,* Elsevier North-Holland, Amsterdam.

Larson, Richard. 1987. '"Missing prepositions" and the analysis of English free relative clauses', *Linguistic Inquiry* 18, 239-266.

Larson, Richard. 1998. 'Free relative clauses and missing Ps: Reply to Grosu', unpublished manuscript, State University of New York, Stony Brook.

May, Robert. 1985. *Logical Form: its structure and derivation,* The MIT Press, Cambridge, Mass.

McCawley, James. 1988. *The major syntactic phenomena of English,* Chicago University Press.

Moltmann, Frederike. 1992. *Coordination and Comparatives.* Ph.D. Thesis, MIT. Distributed by MIT Working Papers in Linguistics.

Moltmann, Frederike and Anna Szabolcsi. 1994. 'Scope interactions with pair-list quantifiers', in M. Gonzales (ed.), *Proceedings of the North East Linguistic Society,* University of Massacusetts, Amherst, 381-395.

Müller, Stefan. 1999. 'An HPSG-Analysis for free relative clauses in German', in *Grammars 2,* Kluwer, Dordrecht, 53-105. Also published in *Deutsche Syntax deklarativ. Head-Driven Phrase Structure Grammar für das Deutsche.* Linguistische Arbeiten 394, Max Niemeyer Verlag, Tübingen.

Nakau, Minoru. 1971. 'The grammar of the pseudo-free relative pronoun *what'*, *English Linguistics* 6, 2-47, Kaitakusha, Tokyo.

Partee, Barbara. 1987. 'Noun phrase interpretation and type shifting principles', in J. Groenendijk, D. de Jongh and M. Stokhof (eds.), *Studies in discourse representation theory and the theory of generalized quantifiers,* Foris, Dordrecht, 115-43.

Reinhart, Tania and Eric Reuland. 1993. 'Reflexivity', *Linguistic Inquiry* 24, 657-720.

Rothstein, Susan. 2000. *Predicates and their subjects,* Kluwer, Dordrecht.

Rullmann, Hotze. 1995. *Maximality in the semantics of wh-constructions,* Ph. D. thesis, University of Massachusetts, Amherst. Distributed by GLSA (Graduate Linguistic Student Association).

Sag, Ivan Gerald Gazdar, Thomas Wasow and Steven Weisler. 1985. 'Coordination and how to distinguish categories', *Natural Language and Linguistic Theory* 3, 117-171.

Sharvit, Yael. 1999. 'Connectivity in specificational sentences', *Natural Language Semantics* 7, 299-339.

Shimoyama, Junko. 1999. 'Internally headed relative clauses in Japanese and E-type anaphora', *Journal of East Asian Linguistics* 8, 147-182.

Suner, Margarita. 1984. 'Free relatives and the matching parameter', *The Linguistic Review* 3, 363-387.

Van Riemsdijk, Henk. 1998a. 'Categorial feature magnetism: the endocentricity and distribution of Projections', in *Journal of Comparative Germanic Linguistics* 2, 1-48.

Van Riemsdijk, Henk. 1998b. 'Trees and Scions, Science and Trees', Chomsky 70th Birthday Celebration Fest-Web-Page. URL: http://mitpress.mit.edu/chomskydisc/riemsdyk.html.

Van Riemsdijk, Henk. 1999. 'Free relatives inside out: Transparent Free Relatives as grafts', in B. Rozwadowska (ed.), *Proceedings of the 1999 PASE Conference,* University of Wrocław.

Van Riemsdijk. Henk. 2001. 'A far from simple matter: syntactic reflexes of syntax-pragmatics misalignments', in I. Kenesei, and R.M. Harnish (eds.), *Semantics, Pragmatics and Discourse. Perspectives and Connections. A Festschrift for Ferenc Kiefer.* John Benjamins, Amsterdam, 21-41.

Vogel, Ralph. 2001. 'Towards an optimal typology of the free relative construction', in A. Grosu (ed.), *Selections from the annual meeting of the Israel Association for Theoretical Linguistics, and from the workshop on the syntax and semantics of relative clause constructions,* Tel Aviv University, 107-119.

Wilder, Christopher. 1997. ‘Transparent free relatives’, in A. Alexiadou, N. Fuhrhop, P. Law and U. Kleinhenz (eds.), *ZAS Papers in Linguistics* 10, 191-199, Zentrum für Allgemeine Sprachwissenschaft, Berlin.