A fresh look at the so-called 'transparent free relatives'

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Abstract

This paper pursues two twin goals: [i] To refine proposals in Grosu (2016) concerning the characterization and analysis of nominal-argumental 'transparent free relatives' ('TFRs'), and [ii] to strengthen Grosu's (2016) argumentation against an alternative approach to TFRs.

Key-words: (T)FRs, individual concepts, contextually restricted guises/counterparts, equation & predication

1 Introduction

A significant amount of earlier literature has argued for the recognition of a 'construction'[1] with the superficial appearance of (a proper sub-class of) free relatives (FRs), but with radically different syntactic-configurational and semantic properties. A non-exhaustive list of relevant studies is: Nakau (1971), Kajita (1977), McCawley (1988), Wilder (1998), van Riemsdijk (1998; 2000; 2001; 2006a; 2006b; 2017), Schelfhout et al (2004), den Dikken (2005), Kim (2011). By far the most prominent proponent of this thesis has been Henk van Riemsdijk (henceforth: HR), and in the remainder of this paper, I will be primarily concerned with his proposals. The construction at issue has received a number of different names, but since Wilder (1998), it is referred to with the (pre-theoretical) term 'Transparent Free Relative' (TFR).

This literature viewed TFRs as necessarily having the superficial appearance of FRs of the following kind: [i] the initial wh-phrase is invariably[2] *what* (*wh-ever* items being excluded), and [ii] the A-bar chain headed by *what* is footed in the subject position of a relative-internal copular construction or small clause (henceforth: c/sc). It was moreover assumed (since Kajita 1977) that TFRs can be nominal, adjectival, adverbial, and verb-phrasal; data viewed as representative of these options are shown in (1a-d) respectively.

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[1] Here and thereafter, this term is used with pre-theoretical import.

[2] Schütze & Stockwell (2019) provide evidence that for some speakers of English, constructions initiated by *who* exhibit many of the properties that were viewed as characterizing TFRs. Since not all speakers of English allow such constructions, and since speakers of other languages find comparable data 'strange', I will put them aside in this paper.

(1) a. Mary collided with [what appeared to Bill to be **a large dog**].
b. This house is [what Bill would consider **beautiful**].
c. He came out the next day, but I didn't get a chance to talk to him [what one might call **privately**].
d. He felt my mother was [what he called **poisoning my mind**].

The principal analytical feature that purported to distinguish TFRs from FRs was that the non-subject of the c/sc, boldfaced in (1), was viewed as playing a syntactic and semantic role analogous to that of the 'phrasal head' in externally-headed complex XPs. In what follows, I will refer to this non-subject with the pre-theoretical term 'pivot.'

In the generative syntactic literature, the wh-phrase of an FR was variously analyzed as the 'phrasal head' of a complex XP (Bresnan and Grimshaw 1977), or as occupying the [Spec, CP] position of a CP endowed with a null sister (Groos and van Riemsdijk 1981), or as occurring in both positions (HR). Semantically, HR (and some of his predecessors) subscribed to Jacobson's (1988; 1995) characterization of FRs as necessarily definite, in the sense of describing something whose existence and uniqueness are presupposed.

In the studies mentioned in the first paragraph of this section, it is the pivot that is viewed as the external phrasal head of TFR. HR, in particular, assumes that the pivot occurs both inside and outside the relative CP, the outside 'token' being pronounced and interpreted in the matrix clause. As for *what*, it is viewed as a mere dummy (van Riemsdijk 2017, section 5.3). For completeness, I note that HR adopted a multi-dimensional framework of syntactic representation, in which the relative and the matrix form bi-dimensional trees lying in different planes, the pivot being first merged within the relative and subsequently re-merged into the matrix; this framework enables him to analyze TFRs in which the pivot is string-medial in superficial representation, as in (2).

(2) There is now on your plate [what may conceivably look like **a rat** to people who look at it from afar].

As far as semantics is concerned, the TFR minus the pivot was viewed as a modifier of the pivot, with the import of a hedging parenthetical (Wilder 1998), or of a lexical intensional modifier (van Riemsdijk 2017, section 5.3).

In a number of earlier papers (Grosu 2003; 2010; 2014; 2016; Grosu and Bayer 2021), I argued against the above approach to TFRs and in favour of the alternative view that FRs and TFRs have the same configurational properties. The twin purposes of this paper are to strengthen the argumentation against the former approach, and to refine and improve the analytical proposals in Grosu (2016).

The remainder of the paper is organized as follows. In section 2, I argue that pivot-as-head analyses of TFRs have a number of problematic semantic consequences. In section 3, I argue, building on Grosu (2016) and focusing on nominal-argumental constructions, that the configurational structure assumed for incontrovertible FRs provides a natural basis for

constructing an adequate semantic analysis of TFRs, without the undesirable consequences of the approach discussed in section 2. In section (4), I critically discuss the arguments that were put forward in earlier literature in support of pivot-as-head analyses; in section 4.1, I list those arguments that I view as successfully refuted in earlier work of mine, and in section 4.2., I focus on the remainder, strengthening and/or adding to my earlier argumentation against them. Section 5 is a brief summary of results.

Before embarking on the tasks just outlined, some preliminary points are in order.

First, I propose to put aside a construction brought up by Schelfhout et al. (2004), for which a pivot-as-head analysis **is** adequate. Unlike Wilder (1998), who proposed that in data like (3a), the italicized string has merely the **import** of a parenthetical, offering a paraphrase like (3b), Schelfhout et al. claim that the italicized string in data like (3a) **is an actual parenthetical**, which admits the intonational contour indicated in (3c).

(3) a. Bill bumped into [*what he suspects* was a dog].
b. Bill bumped into a dog, at least, this is what he suspects it was.
c. Bill bumped into, *what he suspects was*, a dog.

To the extent that data like (3c) are acceptable, they include a constituent that is not 'integrated' into the matrix, and they are not, as far as I can see, analytically challenging. Importantly however, the majority of the examples discussed in the literature on TFRs are not of this kind, they typically include a relative **integrated** into its matrix. To see this, contrast (4) with (5).

(4) Alex bumped into [what Bill merely **suspected** was a dog, he did not bump into [what Bill **was certain** was a dog].
(5) a. #Alex bumped into, what Bill **suspected** was, a dog, he did not bump into, what Bill was **certain** was, a dog.
b. #Alex bumped into a dog, as Bill **thought**, he did not bump into a dog, as Bill **was certain** of.

In (4), association of affirmation/negation with focus can operate from the matrix 'into' the subordinate clause, but in (5a-b), it cannot operate into parentheticals, with the result that the latter examples are self-contradictory. In the remainder of this paper, I focus exclusively on integrated data.

The second preliminary point concerns the necessary definiteness of English FRs, which is reflected in the fact that an incontrovertible FR, i.e., one that fails to satisfy the conjunction of [i]-[ii] in the second paragraph of this section, is infelicitous in the existential context *there BE – XP* (see (6)).

(6) #There is [what Mary gave me yesterday] on this table.

Recent research has established that necessary definiteness is not a universal property of FRs. Caponigro et al. (2021) show that in a number of Mesoamerican languages, incontrovertible FRs can be either definite or indefinite. To the best of my knowledge, there is at the moment no convincing explanation for the necessary definiteness of FRs in the languages in which it is found, so barring future discoveries, I will assume it is an inherent language-specific property, which needs to be analytically stipulated in some way. Now, at least some English constructions that satisfy [i]-[ii] are allowed in the existential context indicated above (see (10)), and these have been viewed as TFRs by HR and others, who proposed that TFRs, in contrast to FRs, can be indefinite. I will in fact show below that TFRs that purport to describe entities, such as (2), are invariably indefinite. In section 3, I will argue that this distinction does not justify viewing such FRs and TFRs as distinct 'constructions', the distinction between them being traceable solely to the logical type of the variable denoted by the 'trace' of *what*. In what follows, I will use 'FR' and 'TFR' as strictly **pre-theoretical** labels of convenience for designating constructions construed as definite and indefinite respectively.

A third preliminary point is that an expression which satisfies [i]-[ii] is felicitous just in case the c/sc is in the scope of a relative-internal explicit or implicit intensional operator, regardless of whether the expression at issue is construed as definite or indefinite. This is illustrated by the infelicity of (7a) in an out-of-the-blue context and uttered with neutral intonation, regardless of whether we try to construe it as in (7b) or (7c).

(7) a. #The car ran into [what is a tree].
b. The car ran into something that is a tree.
c. The car ran into the thing that is a tree.

I conjecture that the infelicity of (7a) is due to the fact that the c/sc is here used vacuously, the intended meaning being simply 'the car ran into a tree.' I do not have a general theory of the conditions under which vacuous use of a construction leads to infelicity, and confine myself to noting its presence in the construction under consideration.

A reviewer of an earlier version of this paper points out that (8a) is acceptable, unlike (7a), and notes that negation is not considered an intensional operator.

(8) a. The car ran into what isn't a tree.
b. The car ran into what IS a tree.

The reviewer is correct, but I believe that (8a) is acceptable not because negation is intensional, but because it is naturally construable as focused (at least, in this example). In fact, (7a) can also be substantially improved by focusing the copula, as in (8b), an effect noted as early as Nakau (1971). The reason is, I believe, that focus, just like intensional operators, introduces alternative states of affairs. (8b) is only acceptable in

a context where one (tacitly) assumes a prior claim that what the car ran into **wasn't** a tree, and correlatively, (8a) is felicitous only if there is a prior (possibly implicit) claim that what the car ran into **was** a tree.

2 Problematic predictions of HR's pivot-as-head analysis of TFRs

Both the analysis of the pivot as an external phrasal head of the TFR and the analysis of the remainder of the construction as a modifier of the pivot have problematic semantic consequences.

Thus, if the pivot is the head of the TFR, we may expect the quantificational properties of the pivot to determine the quantificational properties of the TFR. To test this prediction, we use the existential context *there BE – XP*, which as illustrated in (6) and (9), admits weakly quantified, but not strongly quantified nominal expressions. In contrast, nominal entity-describing TFRs are acceptable in the context under consideration regardless of the quantificational properties of their pivot, as shown in (10). This fact points to the conclusion that TFRs with a DP pivot are invariably indefinite.

(9) There is/are {a dog, #the dog, #all dogs, #most dogs} in the garden.
(10) a. There is now in the garden [what Mary thinks is **a dog**], but it is in fact a cat.
b. There is now in the garden [what Mary suspects may be **Fido/the neighbour's dog**], but it is in fact the neighbour's pet lion.
c. There are now in front of Mary [what she thinks are {**all our / most} parliamentarians**], but she is in fact facing a bunch of monkeys.

Concerning the thesis that the TFR minus the pivot has the import of a hedging parenthetical, it may be adequate in cases like (3a,b), but it is inadequate in certain situations where the context of the pivot is denied, as in (11a). As can be seen, the purported paraphrase in (11b) is self-contradictory, although (11a) is not.

(11) a. I have just bumped into what {wasn't, couldn't possibly have been} Fido.
b.#I have just bumped into Fido, but it {wasn't, couldn't possibly have been} him.

The alternative view that the modifier functions like a lexical intensional modifier looks a bit more promising at first blush, because such modifiers may deny the content of their modifiee. E.g., a *false* prophet is not a prophet, and a *fake* doctor is not a doctor. However, lexical intensional adjectives like *false* or *fake* modify an N(P), not a DP, and I do not know of independent evidence supporting the existence of non-parenthetical lexical modifiers of DP. In any event, I do not see what plausible adjective can be used in cases where there is no NP in

the pivot, as for example in (11a) or (12a). The most one can do to paraphrase (12a) by using a lexical item is by means of a lexical **adverbial**, as in (12b), but this adverbial modifies a proposition, not the pivot. Moreover, (12a) seems fully acceptable only in its full version, where the adverbial bears explicit parenthetical intonation. Furthermore, in the case of (11a), I do not even see what lexical adverbial could be used to paraphrase it (see (13)).

(12) a. I have just bumped into what may have been Fido.
b. I have just bumped into #(,) possibly #(,) Fido.
(13) #I have just bumped into, impossibly, Fido.

In sum, the pivot-as-head approach to TFRs seems not to offer a natural basis for building a compositional semantic analysis on it. In contrast, the problems just noted do not arise if TFRs are assigned the same configuration as FRs, with the pivot in CP-internal position at all levels of representation. It remains to show how an adequate semantics can be built on such a configuration. We turn to this task in the next section.

3 The semantics of (T)FRs

The subcases of (1) illustrate not only TFRs of different syntactic categories, but also three distinct types of interpretation that such data may have, due to different kinds of contribution made by the pivot to the interpretation of the entire construction.

In (1a), the pivot provides, in Bill's belief-worlds, an explicit characterization of the 'bumpee', as well as a possibly distinct, but indeterminate characterization of that entity in other worlds (in this case, the speaker's belief-worlds); we thus have two potentially distinct guises (or 'counterparts') of the bumpee, one explicit and one implicit and indeterminate.

In (1b), the TFR denotes a (possibly complex) property P of the house, e.g., large windows and white walls. P is not explicitly expressed, due to the 'free' nature of the relative, but there can be no disagreement between Bill, the speaker, and/or anyone else concerning the nature of P[3]. Potential disagreement between such individuals may arise only in relation to whether a house with P is also beautiful, something that Bill believes, but the speaker or other people may or may not believe.

In (1c,d), due to the verb 'call', the contribution of the pivot is, or at least can be, meta-linguistic, in the sense that potential disagreement between the worlds of the intensional operator and worlds associated with the matrix concerns the linguistic form in which some meaning is expressed.

[3] In Grosu (2016, section 5.5), I accounted for this effect by stipulating that the TFR denotes a **constant** property of type <<s,<e,t>>>. This stipulation may be avoided by having the TFR denote an extensional property, of type <e,t>. But as indicated below in the text, detailed consideration of the semantics of this and other constructions is left for another occasion.

These three varieties of meaning are not restricted to the categories in which they appear in (1), e.g., a nominal construction may also be meta-linguistic, e.g., *he suffers from what some people call 'the French disease'*. Furthermore, one consultant accepted an adjectival construction with the kind of meaning described above in relation to (1a), specifically, *this house is what Bill believes is white (but it is in fact green)*. A detailed investigation of these three types of meaning in relation to each syntactic category in which each may be found goes beyond the scope of this paper. I will thus pursue in this section the following more modest goals: In section 3.1, I focus on the first type of meaning, and confine my attention to nominal-argumental (T)FRs. I explore the hypothesis that nominal-argumental 'TFRs' are simply FRs whose special interpretive properties are traceable to a single feature of their internal make-up, specifically, the logical type of the variable denoted by the trace of *what*. In section 3.2, I show that a pivot-as-head analysis is inadequate for non-nominal TFRs, just as it is for nominal ones (see section 2); a detailed investigation of their semantics is left for another occasion.

3.1 The semantics of nominal-argumental (T)FRs

In FRs, if there is an internal intensional operator, it is part of the contextually presupposed restriction, and thus does not affect the infelicity of the FR in an existential context, as illustrated by the discourse in (14), where the first sentence coerces a definite construal of the bracketed constituent in the second sentence, with resulting infelicity.

(14) a. Bill is crazy and thinks that your horse is Fido. And now, take a look,
#there is [what Bill thinks is Fido] in my garden!

An FR with properties [i]-[ii] is adequately translated by interpreting the trace of *what* as a variable of the type of entities, as in (16). For concreteness, I assume the configurational structure schematically indicated in (15), in which definiteness needs to be stipulated on a language-specific basis (I omit explicit implementation of this point).

(15) $[\varnothing_{\text{Det}}\ [_{\text{CP}}\ \text{what}_i \ldots [_{\text{C/S}}\ t_i\ (\text{BE})\ \text{XP}\ ]\ldots]]]$.

(16) *Context: Bill is crazy, and has always believed that the garden-gate is Fido (and that nothing else is Fido).*

a. Alex bumped into [what$_i$ *Bill has always believed* [$_{\text{ZP}}$ t_i is Fido]],
but it is in fact the garden-gate.

b. $\lambda w.\text{BUMP-INTO}_w(\text{alex}, \iota/\sigma(\lambda x_e.\forall w' \in \text{BELIEVE}_{w,\text{bill}}: [x=f]_{w'}))$

When a definite construal is not contextually coerced, an indefinite construal becomes in principle possible, with resulting felicity in the existential context (see (10)). Focusing on *nominal-argumental* TFRs, as in (10b)), consider the example in (17a), with the intended import of (17b).

(17) a. Alex bumped into [what$_i$ Bill thought [$_{C/SC}$ t$_i$ was **Fido**].
b. Alex bumped into something that Bill thought was Fido.

In contrast to (14), where Bill's belief is about a presupposed entity, in (17a), it is naturally interpretable as being about whatever Alex bumped into. Due to the presence of an intensional operator in the relative, the 'bumpee' is presented in two potentially distinct 'guises', one defined in Bill's belief worlds and explicitly described by the pivot, and one assumed to exist in the worlds of the matrix. In the simplest situation, the latter are the belief-worlds of the speaker, but may also be someone else's, if the speaker reports an event (s)he heard about from someone else. Focusing, for simplicity, on the former kind of situation, the speaker is not committed to having any specific view about the nature of the bumpee, since no information to that effect is explicitly provided. In the case of (17a), the speaker is committed to the assumption that a bumpee exists, but this type of assumption is not justified in general, as a reviewer of an earlier version of this paper perceptively remarked. Thus, consider (18).

(18) Mary is yelling at what Bill believes is Fido.

Assume the following context: The speaker, an atheist, hears Mary accusing God, whom she believes exists, of her miserable life. In this case, the 'yelee' is Fido in Bill's belief-worlds, God in Mary's, and is undefined in the speaker's belief-worlds.

I submit that the potentially distinct guises of the bumpee in (17), of the yelee in (18), and of comparable thematic participants in other comparable data can be captured by assuming that the trace of *what* is interpreted as a variable over individual concepts (ICs), of type <s,e>. Correlatively, the type of *what* needs to be adapted for triggering lambda abstraction over ICs, with the result that CP ends up denoting a set of type <<s,e>,t>.

In pursuing for (integrated) nominal-argumental constructions the hypothesis, enunciated at the beginning of section 3, that what were earlier viewed as FRs and TFRs differ analytically only in the type of the variable denoted by the trace of *what*, can we assume that the English-specific property of necessary definiteness, found in FRs, is also found in TFRs like (17a)? This would mean that, given the schematic structure in (14), the null Det of such TFRs is a definite operator of type <<<s,e>,t>, <s,e>>, so that its application to CP yields a denotation of type IC for the complex DP. As far as I can see, the answer is yes. The indeterminate construal of the complex DP is attributable to the possibility that the values of the IC it denotes may vary across the worlds in which it is evaluated. In fact, this approach can be extended to data like (19), where indeterminacy exists in Bill's belief-worlds as well (the bumpee being any plausible entity other than Fido). What is needed is to allow the values of the IC to vary across the worlds of the matrix and/or of the relative.

(19) Alex bumped into what Bill is certain wasn't Fido.

Making the complex DP definite in data like (17a), (18) and (19) implies that the unique existence of the IC it denotes is presupposed in the worlds of evaluation. This implied conclusion is difficult to test intuitively, because our intuitions can access only **the value** of the IC in the worlds of the matrix. At the same time, the hypothesis that the TFRs under consideration denote definite ICs is not threatened by the fact that such FRs are felicitous in the existential context, as in (10), because this context is sensitive only to the (in)definiteness of **entities**. As pointed out in earlier literature (e.g., Carlson 1977), nominal expressions that denote unique kinds/amounts of something are allowed in the context at issue, as illustrated by (20a), and its paraphrase in (20b).

(20) a. There is now in your glass exactly what there was in it 100 years ago.
b. There is now in your glass exactly the kind/amount (of, e.g., wine) that there was in it 100 years ago (although not necessarily the same wine).

It thus seems reasonable to attribute the felicity of (10a-c) to the fact that in the bracketed expressions, definiteness targets something other than entities.

In fact, the hypothesis at issue can arguably shed some light on a state of affairs that might otherwise seem *prima facie* puzzling. In a number of Romance languages, the counterparts of *what*-FRs are typically 'light headed' relatives, whose overt head is a demonstrative element, e.g., *ce* in French. Romanian provides an especially intriguing picture. Thus, the import of incontrovertible *what*-FRs may be expressed either by an FR built on the English pattern, or by a demonstrative-headed DP, as in (21a-b) respectively. Interestingly, however, the import of TFRs is felicitously expressible only by means of DPs headed by a light demonstrative, as illustrated in (22).

(21) a. Am găsit astăzi [ce ai pierdut tu ieri].
have.1 found today what have.2.Sg lost you.Sg yesterday
'I found today what you lost yesterday.'
b. Am găsit astăzi [ceea-ce ai pierdut tu ieri].
have.1 found today that-Czer have.2.Sg lost you.Sg yesterday
'I found today that which you lost yesterday.'

(22) M-am poticnit de [{ceea-ce /#ce} părea a fi un arici].
Refl-have.1 stumbled of that-Czer what seemed to be a hedgehog
'I stumbled over what seemed to be a hedgehog.'

I submit that the facts brought up in the two preceding paragraphs support the following conclusion: In the languages we have so far considered, (the cross-linguistic counterparts of) nominal-argumental *what*-FRs and TFRs are both definite, the only difference between them being that what is presupposed to uniquely exist is an individual in the former case and an IC in the latter.

I propose to translate (17a) as in (23), where **x** is a variable of type <s,e>, restricted by the contextual variable **C**, of type <<s,e>,t>. The function of **C** is to exclude contextually inappropriate values of **x**. In (17a), if the values of the IC are unconstrained, its value in the relative may be something not necessarily related to the bumping event, and the meaning of this example becomes something like *Alex bumped into something and Bill thought that something was Fido*, which is clearly too weak. Therefore, in keeping with observations made earlier about (17)-(18), I propose to limit the values of **x** in all the worlds in which it is defined to the thematic participant defined by the TFR in the eventuality expressed by the matrix. On the assumption that the latter restriction is justified in general, I propose, barring future counter-evidence, to capture it in the semantics by defining **C** as in (24).

(23) $\lambda w.\text{Bumped-into}_w(\text{alex}, \iota/\sigma(\lambda \mathbf{x}.\mathbf{C}(\mathbf{x}) \wedge \forall w' \in \text{THINK}_{w,\text{bill}}: \mathbf{x}(w')=f)(w))$

(24) a. $[\![\mathbf{C}_{<<s,e>,t>}]\!] = \lambda \mathbf{x}_{<s,e>}.\forall w''[\mathbf{x}(w'') \neq \perp \rightarrow P(\mathbf{x}(w''))]$.
b. $[\![P]\!] = \lambda y.[\text{TFR's matrix}]^{\text{TFR}/y}$

A reviewer of an earlier version of this paper challenges the generality of (24) as follows: *Suppose that Bill and Alex live together in a house. Recently, Alex bought several small footstools that he placed in different rooms. Bill has very poor eyesight, and though he has seen all of the footstools, whenever he sees one he thinks it is their dog Fido, not knowing about Alex's recent purchases. I know all of this. Yesterday I heard that Alex bumped into one of the foot stools, though I have no idea which he bumped into, and Alex is successfully hiding the fact that he bumped into a footstool from Bill. In this situation, (17a) would be an entirely appropriate thing for me to say, but in the context given it would … not suggest that Bill thought Alex bumped into anything. Under the analysis given in (23)-(24), however, the sentence should be false in this scenario, and since* ***it is not definite*** *[boldfacing mine], it shouldn't be analyzable as an extensional FR either.*

The reviewer's boldfaced remark is correct as far as entities go, but it overlooks the fact that, in the assumed context, it makes perfect sense to interpret the FR as denoting a unique **kind** of entity, as in the following paraphrase, which does not imply that Bill is aware of the bumping event (on kind-FRs, see Hinterwimmer 2013).

(25) Alex bumped into the kind of thing that Bill thought was Fido.

For completeness, I note that the kind construal of (17a) seems (to me) easier to get if *thought was* is replaced with the generic *thinks is.* At the same time, a kind reading is also possible for (17a) as it is, in which case, the time of *thought* ought presumably to be construed as preceding the time of the bumping. Be this as it may, I do not think that the referee's remark endangers (24), and I propose to keep it in the grammar, barring future counter-evidence.

The same reviewer required "a clear indication of what parts of the interpretation come from where and how they go together into a whole." Grosu (2016) provided a step-by-step semantic derivation of a sentence that includes a nominal-argumental TFR, and I assume that such a derivation is essentially what the reviewer was asking for. For the reader's convenience, I reproduce that example in an appendix.

In (23) (and in the example in the appendix), the pivot provides an explicit guise of the IC by virtue of being equated with the value of the IC in the worlds of the intensional operator. This is a straightforward matter when the pivot is a referential expression, as in these examples. But what happens when it is not, as in (10a,c)? In Grosu (2016), I translated data like (10a) by predicating the pivot of the IC's value. However, a predicate is not suitable for describing a guise of an entity, as brought out by the change in interpretation when the pivot is adjectival and has incontrovertible predicate status. Observe that (26) is interpreted not like (17a), but like (16a), in the sense that the FR describes an entity presupposed to exist and be unique.

(26) Alex bumped into [what Bill thinks is **ferocious**].

The inability of an AP pivot to give rise to a construal analogous to that of (17a) can be further demonstrated by exploiting an English-specific property of certain items that are usually inappropriate for referring to humans, but may do so when serving as subjects of an equative construction. Thus, Carlson (1988) pointed out the contrast between (27a) and (27b), and I further note the contrast between (27a) and (27c).

(27) a. This is Rosa.
b. #Rosa is this.
c. #This is intelligent/attractive.

Carlson proposed to trace the acceptability of (27a) to the fact that *this* is construable as an individual stage, i.e., as the value of a (temporal) IC at the time of speech, and suggested a translation along the lines of (28).

(28) $\mathbf{x}_{<t,e>}(t_o)$ = rosa

A contrast just like the one in (27a,c) is found in the c/sc of the kind of FRs under consideration, as shown in (29).

(29) a. Bill is chatting with [what seems to be Rosa].
b. #Bill is chatting with [what seems to be intelligent/attractive].

This points to the conclusion that in such FRs, the c/sc needs to be equative to achieve felicity. If so, FRs with non-referential pivots, such as (30a) and (31a), require translations like (30b) and (31b) respectively.

(30) a. Alex bumped into what Bill thought was a dog.

b. $\lambda w.\text{Bumped-into}_w(\text{alex}, \iota/\sigma(\lambda \mathbf{x.C(x)} \wedge \forall w' \in \text{THINK}_{w,\text{bill}}: \exists y.\text{dog}_{w'}(y) \wedge y = \mathbf{x}(w'))(w))$

(31) a. Mary is yelling at [what she thinks are all the parliamentarians].

b. $\lambda w.\text{Yell-at}_w(\text{mary}, \iota/\sigma(\lambda \mathbf{x.C(x)} \wedge \forall w' \in \text{THINK}_{w,\text{bill}}: \forall y.(\text{parliamentarian})y \rightarrow y = \mathbf{x}(w'))(w)$

To conclude: I have argued in this section that the distinct interpretations of nominal-argumental FRs and TFRs can be analytically reduced to an extensional/intensional distinction in the logical type of the variable abstracted over. I have furthermore argued that in order to allow such a TFR to fulfil what I take to be its *raison d'être*, i.e., bring up potentially distinct guises/counterparts of something, the relative-internal c/sc needs to rely on equation.

3.2 The inadequacy of the pivot-as-head approach to non-nominal TFRs

The contradictory status of the (b) sub-cases of (32)-(34) reveals the inappropriateness of a pivot-as-head *cum* parenthetical semantics approach to the corresponding (a) sub-cases.

(32) a. This house is what I would never characterize as beautiful.

b. #This house is beautiful, but I would never characterize it this way.

(33) a. I managed to talk to him what I would never describe as privately.

b. #I managed to talk with him privately, but I would never describe it this way.

(34) a. I felt my mother was what I would never describe as poisoning my mind.

b. #I felt my mother was poisoning my mind, but I would never describe it this way.

4 HR's arguments for a pivot-as-head approach to TFRs

Proponents of the pivot-as-head approach to TFRs have provided a number of arguments in purported support of it; these are summarized in van Riemsdijk (2017, section 5.3). In Grosu (2003; 2014; 2016) and Grosu and Bayer 2021, I offered counterarguments to them. I find some of those counterarguments adequate, and mention them, with brief comments, in section 4.1. At the same time, I consider that the remaining counterarguments can be refined and/or strengthened; this task is carried out in section 4.2.

4.1 Arguments that were (I believe, successfully) refuted in my earlier work

The following arguments in support of a pivot-as-head analysis of TFRs were, in my view, successfully refuted in earlier work of mine.

(35) a. The acceptability of extraction from the pivot is determined only by the matrix environment of the TFR (in conjunction with superordinate structure, if any), material internal to the relative clause playing no role in this respect (van Riemsdijk 2017, section 5.3, item (vi)).

b. The (in)definiteness of the pivot determines the (in)definiteness of the TFR (Wilder 1998, van Riemsdijk 2017, section 5.3, item (i)).

c. The TFR and the pivot exhibit morphological Case (mis)matching effects comparable to those found in FRs (Wilder 1998, van Riemsdijk 2000; 2001; 2017, section 5.3, item (x)).

d. In the pre-nominal adjectival TFRs of Dutch, the adjectival pivot exhibits morphological agreement effects that mimic those found with incontrovertible pre-nominal APs, a state of affairs that is unexpected if the pivot is present only in the relative. Furthermore, the pivot linearly follows the subordinate verb(al complex), a state of affairs that is otherwise excluded in the subordinate clauses of this language (den Dikken 2005, van Riemsdijk 2006a; 2017, section 5.3, item (xi)).

Concerning (35a), Grosu (2003, section 5.5, and 2016, section 3.1) provides evidence that extraction from the pivot **is** sensitive to the pivot's relative-internal environment, and thus that (35a) is an incorrect generalization.

Concerning (35b), Grosu (2016, section 3.1) showed that TFRs are construed as indefinite regardless of the (in)definiteness or quantificational force of the pivot, and thus that the generalization in (35b) is also incorrect. See also (9)–(10) above, and the discussion thereof.

Concerning the claim in (35c), it was refuted in detail in Grosu (2014, section 3); a summary of the refuting argumentation can be found in Grosu (2016, section 3.1; see in particular examples (19)–(22) in that paper and the surrounding text).

Concerning the claim in (35d), it is based on Dutch data like (36) (= (81) in van Riemsdijk 2017, with minor adaptations), and is widely viewed as providing the strongest support available for the view that the pivot is an element of the matrix.

(36) a. Deze auto is wat je duur/∗dur-e zou kunnen noemen.
this car is what you expensive-agr could call
'This car is what you could call expensive.'

b. een wat je zou kunnen noemen ∗duur/**dur-e** auto
a what you could call expensiv-agr car
'a what you could call expensive car'

This argument was carefully examined in Grosu and Bayer (2021) on the basis of data from Dutch, German and Yiddish, elicited from 8, 17, and 2 consultants respectively, and an

alternative account that places the pivot within the relative CP when a parenthetical construal is excluded was presented and defended in detail.

4.2 Counter-arguments in need of refinement/strengthening

The following arguments in support of a pivot-as-head analysis of TFRs were discussed in my earlier work on the topic in ways which, I feel, bear refinement and strengthening.

(37) a. The pivot and the TFR must be homo-categorial, a state of affairs typically found in headed constructions (Wilder 1998).

b. The TFR may describe a human entity, a privilege that incontrovertible *what*-FRs do not have. This purports to show that in TFRs, the pivot is the Head of the construction, and that *what* is a dummy which does not affect the interpretation of the TFR (Wilder 1998, van Riemsdijk 2017, section 5.3, item (v)).

c. The pivot may be a chunk of an idiom which is licensed by another chunk in the matrix, a state of affairs that allegedly requires clause-matiness of the two chunks (van Riemsdijk 2000; 2017, section 5.3, item (viii)).

d. The syntactic number of the pivot determines the syntactic number of the TFR, something that is allegedly impossible in FRs (Wilder 1998, van Riemsdijk 2017, section 5.3, item (iv)).

e. A bound anaphor within the pivot may be bound by an antecedent in the matrix, but such an antecedent cannot allegedly bind an anaphor within an FR (van Riemsdijk 2000; 2001; 2017, section 5.3, item (ix)).

4.2.1 Homo-categorial status

Concerning the claim in (37a), i.e., that the pivot must be homo-categorial with the TFR, Grosu (2003, section 4.1.3 and 7.4) proposed that *what* in TFRs, but not in FRs, is unspecified for category, and needs to derive categorial specification from the pivot, ultimately conveying it to the TFR. I view this assumption as unnecessary, the homo-categorial effect being in some cases derivable from independent semantic or syntactic properties, and in other cases, un-demonstrable.

Thus, in data like (1a), where the TFR is in a nominal argumental position, the pivot needs to be nominal in order to describe a guise of the TFR (see discussion of (29)–(31) above).

Concerning data like (1b), if the semantics informally suggested in the third paragraph of section 3 is anywhere on the right track, all that follows is that both the TFR and the pivot must denote a property, but whether the TFR is nominal or adjectival is undecidable. When such a TFR is pre-nominal, the homo-categorial effect is demonstrable, and traceable to two facts: [i] the fact that a prenominal modifier of N(P) must be adjectival, and [ii] the fact that in English, Dutch and a number of other languages, such a modifier needs to end with an adjective. I noted in section 4.1 that HR views data like (36) as strongly supporting the pivot-as-head approach

to TFRs, and I also indicated that detailed counter-argumentation was provided in Grosu & Bayer (2021).

Concerning meta-linguistic data, such as (1c,d), informally characterized in the fourth paragraph of section 3, the syntactic form of the pivot must be suitable for expressing the meaning of the TFR. However, when some type of meaning may be expressed by means of more than one category, it is not always demonstrable that homo-categoriality needs to be respected. In the variant of (1c) in (38), where the pivot is a PP, it is not clear that the TFR must itself be a PP, rather than an AdvP.

(38) I didn't get a chance to talk to him what one might call **in a private way**.

In sum, homocategorial effects provide no convincing support for a pivot-as-head analysis.

4.2.2 Compatibility of *what* with a human denotation

The claim made by the first sentence in (37b), namely, that a TFR may describe a human entity, a privilege that incontrovertible *what*-FRs do not have, is correct, and supported by data like (29a). However, the claim made by the second sentence in (37b), namely, that in TFRs, the pivot is the Head of the construction and *what* is a dummy without effect on the interpretation of the TFR, is problematic, because data like (29a) are English-specific. Constructions with the overall semantic properties of TFRs are also found in Romance and other Germanic languages, as well as in Modern Hebrew, but in all these languages, data like (29a) are infelicitous and offensive, just like (29b). Illustrations from German and Hebrew are provided in (39)–(40) (see (39)–(40) in Grosu 2016 for comparable French and Italian data).

(39) a. #Johann spricht mit [was Marie zu sein scheint].
Johann speaks with what Marie to be seems
'*Intended:* John is speaking with what seems to be Marie.'

(40) #Moshe medaber im ma she yaxol lihyot Miriam.
Moshe speaks with what that could be Miriam
Intended: 'Moshe is speaking with what may be Miriam.'

Such facts point to the conclusion that in the languages just referred to, the left-peripheric items that are counterparts of *what* may not lose the non-human specification that they have in FRs, and correlatively, that the counterparts of *what* do play a role in the interpretation of TFRs in these languages, and are thus not dummies.

4.2.3 Idiom chunks

The claim in (35c), i.e., that chunks of an idiom that seem to be in different clauses need to be analyzed as clause-mates, is based on data like (41)–(42) (idiom chunks boldfaced).

(41) They didn't **make** [what the boss would view as **sufficient/satisfactory headway**].
(42) Nick **lost** what according to the dictionary are called **his marbles**.

An important observation, also made by Grosu (2003, section 4.1.6), is that data like (41) cannot be freely constructed with just any old idiom, as shown by the incoherence of the examples in (43) (kindly provided by a reviewer of an earlier version of this paper).

(43) a. #Mary kicked {what must have been/what John thinks is} the bucket.
b. #John is pulling what Mary thinks is my leg.
c. #John really stuck what most people consider his foot in it this time.
d. #This claim does not hold what can be reasonably viewed as water.

Furthermore, (42) (= (76a) in van Riemsdijk 2017) is acceptable only because the chunks receive a meta-linguistic construal of the chunks, made possible by the reference to 'the dictionary.' In a context that excludes a meta-linguistic interpretation, a discontinuous presentation of the chunks of this idiom yields an infelicitous result, e.g. *#Nick lost what Mary regards as his marbles*. This fact, in conjunction with the deviance of (43), points to the conclusion that the pivot of a TFR is not a clause-mate of the matrix predicate, and thus that (41) is not licensed by clause-matiness of the chunks.

A strong argument that (41) is not licensed by clause-matiness of the chunks emerges from the following considerations: The two words in *make headway* have the essential import of the corresponding words in *achieve progress*. Now, progress is a graded notion, so that progress, and thus headway, can be made to various extents, and may also be of various kinds. Next, observe that (41) does not deny that what was made was headway, rather, it denies that the **amount/kind** of headway that was made would be viewed by the boss as sufficient/satisfactory. If so, the bracketed constituent in (41) is not a TFR at all, but simply an amount/kind-denoting (definite) FR, paraphreasable as in (44). If so, there are no grounds for analyzing *headway* as a matrix item, and I thus view the claim in (37c) as successfully refuted.

(44) They didn't make the amount/kind of headway/progress that the boss would view as sufficient/satisfactory.

4.2.4 Syntactic Number

The claim in (37d), i.e., that the syntactic number of the pivot determines the syntactic number of the TFR, was supported in the literature with pairs of data that differ from each other **non-minimally,** as in (45). (45a) was taken to show that an incontrovertible *what*-FR, while possibly semantically plural, is necessarily syntactically singular. On this basis, Wilder and van Riemsdijk argued that the plurality of the TFR in (45b) is a consequence of the plurality of the pivot, *what* playing no part in the determination of the syntactic number of the TFR.

(45) a. [What I read last summer] {was / *were} written by Dickens and Hemingway.
b. [What$_k$ could best be described as [t$_k$ **pebbles**]] {were, *was} strewn across the lawn.

Grosu (2003, section 7.4) does not question these purported implications of data like (45), and contents himself with offering an alternative account of such data that relies on the configuration in (15): *what* is unspecified for syntactic number in TFRs, and acquires number specification from the pivot.

That *what* may be unspecified for syntactic number in some contexts, thereby becoming compatible with syntactic plurality, is a reasonable assumption, supported by data like *Of John, Bill, Mary and Bill,* ***what individuals*** *do you like best?* But I believe that more goes on here, and that it is possible to refute the argument in (37d).

Thus, it is well-known that a plural nominal may denote either a plurality or a group, the latter being atomic. In particular, consider the pair of sentences in (46), which may be used in a situation where there are poisonous mushrooms on a plate. (46a) is appropriate if the mushrooms are viewed as a plurality, and (46b), if they are viewed as a group or heap.

(46) a. These are/*is poisonous mushrooms.
b. This is/*are poisonous mushrooms[4].

Observe that the copular structures in (46) are equative, and that the plural non-subject is syntactically compatible with both plural and singular subjects and both plural and singular inflected copulas.

Now consider (47), where a plural nominal viewed as describing a group occurs in incontrovertible subject position. In this case, the verb is necessarily plural, despite the group import of the subject.

(47) Poisonous mushrooms are/*is lying in a heap on this plate[5].

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[4] Some speakers find the singular version of (46b) slightly degraded relative to the plural version of (46a). Nonetheless, they do not find it nearly as deviant as the singular version of (47).

[5] A reviewer observes that [i] is more acceptable than the singular version of (47). I agree with this judgment, but I think that ‘sauteed mushrooms’ is here the proper name of an item on the menu, much like the nickname ‘big hands’ applied to a person, and its internal structure is thus irrelevant to its agreement with a verb.

Finally, consider the data in (48), which differ from (45b) in that *what* is the subject of a verb inflected for syntactic number.

(48) a. [What seem to be **poisonous mushrooms**] need/?*needs to be disposed of promptly.
b. [What seems to be **poisonous mushrooms**] needs/?*need to be disposed of promptly.

In appropriate contexts, the bracketed constituents in (48) may be construed either as discourse-novel, and thus indefinite, or as presupposed to exist and be unique, and thus definite. The definite construal can in fact be made quite salient with a different choice of words. Thus, consider (49a-b), which seem to be easy to construe as in (50a-b) respectively.

(49) a. [What have always seemed to Bill to be pebbles] now seem to Mary to be diamonds.
b. [What has always seemed to Bill to be pebbles] now seems to Mary to be diamonds.
(50) a. [The things that have always seemed to Bill to be pebbles] now seem to Mary ….
b. [That which has always seemed to Bill to be pebbles] now seems to Mary ….

Two conclusions follow from (48)–(50). First, the effects under consideration are independent of the FR/TFR distinction. Second, under a TFR construal of (48b), if the pivot is the head of the TFR, as Wilder and van Riemsdijk assumed, or if the syntactic number of the pivot is necessarily the syntactic number of the TFR, as Grosu (2016) assumed, then this example should be unacceptable, contrary to fact.

I suggest the following account of the effects at issue. The group/plurality construal of the pivot is conveyed to the trace of *what* by virtue of equation, which thereby acquires singular/plural syntactic number, triggering a corresponding syntactic number on the copula. These semantic and syntactic properties of the subject of the c/sc become properties of the chain headed by *what*, and ultimately of the TFR. The syntactic number acquired by the TFR determines the syntactic number of the matrix verb.

Why is then the singular version of (45b) not fully felicitous? I suggest the reason is that it is hard to think of a group as being 'strewn.' Note that if we change the wording as in (51), singular number on the matrix verb improves in felicity.

(51) ?What can best be described as pebbles forms a big heap near the tree in your garden.

To conclude: (37d) is an incorrect generalization, which can thus provide no support for analyzing the pivot of a TFR as a matrix element.

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[i] Sauteed mushrooms is on the menu tonight.

4.2.5. Anaphor binding

The argument in (37e), i.e., the claim that a matrix antecedent may bind an anaphor within a TFR-pivot, but not within an FR, is based on pairs like (52), where (52a) is assumed to include a TFR, and (52b) includes an incontrovertible FR, given the initial *whatever*. This is viewed by van Riemsdijk (2000; 2001) as supporting the thesis that the boldfaced constituent in (52a) is in the matrix.

(52) a. They live in [what is often referred to as **each other's backyard**].
b. *They live in [whatever location you used to refer to as each other's backyard]

Grosu (2003, section 5.6) notes that there is no very good reason to expect binding to be excluded in structures like (52b), since Condition A of the Binding Theory is widely viewed as applying only to co-arguments of a predicate (Reinhart and Reuland 1993). He also offers a felicitous example of anaphor binding into a wh-ever FR (his (93c)), of which I provide a slightly modified version in (53). To this, I wish to add that the binding pattern in (52a) is also found in (54a), where it operates into an FR, as well as in (54b), which constitutes a paraphrase of (54a), and in which binding operates into an overtly headed relative clause.

(53) They are willing to live in whatever locations can realistically be viewed as **each other's backyard**.
(54) a. They intend to move right away into what has/have always been viewed as **each other's backyard(s)**.
b. They intend to move right away into the precise locations that have always been viewed as **each other's backyard(s)**.

Since there are no grounds for viewing the boldfaced constituents in (53)-(54) as matrix elements, there are no grounds for assigning this status to the one in (52a), either. Argument (37e) thus collapses.

5. Summary of results

This paper has pursued the twin goals of refining the analysis of nominal-argumental TFRs in Grosu (2016), and of strengthening the argumentation in Grosu (2003; 2016) against some of the arguments put forward in earlier literature in support of a pivot-as-head approach to TFRs. Among the results obtained, I wish to single out the following:

[A] The different effects associated with TFRs and FRs with a comparable internal structure are arguably traceable to a single analytical distinction: The logical type of the variable denoted by the trace of *wha*t is <s,e> in TFRs and e in FRs (see section 3.1).

[B] The analysis of the copular structure or small clause whose subject is the trace of *what* needs to rely on equation in TFRs, but not in FRs (see section 3.1).

[C] Many of the properties that were earlier viewed as specific to TFRs are in fact also found in FRs, and can thus not be used as tests for TFR status (see sections 4.2.4 and 4.2.5).

At the same time, a number of issues have only been touched upon, their serious investigation being left for further research:

[D] What interpretations are available for constructions with a comparable internal structure, but with a non-nominal pivot, and how should these interpretations be formalized?

[E] Can non-nominal constructions be either definite or indefinite, and if yes, where does their (in)definiteness come from?

[F] What is an appropriate formalization for constructions whose pivot has meta-linguistic import?

APPENDIX

In this appendix, I reproduce, with inconsequential adaptations and adding line (55r), the example (56) in Grosu (2016), which illustrates in full detail the semantic derivation of a sentence that (properly) includes a nominal-argumental TFR.

(55) a. $[_{IP}$ Alex bumped into $[_{DP}$ $\emptyset_D$ $[_{CP}$what$_k$ $[C^o$ t_k seemed to Bill t_k to be Mary]]]].

b. *Mary* → m, *Bill* → b — *with* $m,b \in CON_e$

c. $t_k \rightarrow \mathbf{x}$ — *with* $\mathbf{x} \in VAR_{<s,e>}$

d. *be* → λx.λy. y = x

e. *be Mary* → λy. y = m

For (55e) to be applicable to x, *the latter must shift down, as in (55f):*

f. $\mathbf{x} \rightarrow \mathbf{x}(w')$ — *type e, with* $w' \in VAR_s$

g. t_k *be Mary* $\mathbf{x}(w') = m$ — *type t*

h. *seem* →λyλp.∀w''∈ $seem_{w,y}$: p(w''), — *with* $y \in VAR_e$, $p \in VAR_{<s,t>}$

i. *seem to Bill* → λp.∀w'' ∈ $seem_{w,b}$: p(w'')

For (55i) to be applicable to (55g), the latter must shift up, as in (55j):

j. $\mathbf{x}(w') = m$ → λw'.$\mathbf{x}(w') = m$ — *type* <s,t>

k. *seem to Bill* t_k *to be Mary* → ∀w''∈ $seem_{w,b}$: [λw'. $\mathbf{x}(w') = m$](w'')

$= \forall w'' \in seem_{w,b}: \mathbf{x}(w'') = m$ *of type t*

The movement of what *triggers lambda abstraction in (55k), yielding (55l):*

l. $\lambda x.\forall w'' \in seem_{w,b}: \mathbf{x}(w'') = m$ *type* $<<<s,e>,t>, t>$

m. *what* $\rightarrow \lambda Q.\lambda \mathbf{x}.\mathbf{C}(\mathbf{x}) \wedge Q(x)$, *type* $<<<s,e>,t>, <<s,e>,t>>$, *with* $Q \in VAR_{<<s,e>,t>}$

n. CP $\rightarrow \lambda \mathbf{x}.\mathbf{C}(\mathbf{x}) \wedge \forall w'' \in seem_{w,b}: \mathbf{x}(w'') = m$ *of type* $<<s,e>,t>$

o. DP $\rightarrow \sigma(\lambda \mathbf{x}.\mathbf{C}(\mathbf{x}) \wedge \forall w'' \in seem_{w,b}: \mathbf{x}(w'') = m)$, *of type* $<s,e>$

p. $DP_w \rightarrow \sigma(\lambda \mathbf{x}.\mathbf{C}(\mathbf{x}) \wedge \forall w'' \in seem_{w,b}: \mathbf{x}(w'') = m)(w)$:
the value in w of the concept in step o, of type e

q. IP $\rightarrow$ Bumped-into$_w$(alex, $\sigma(\lambda \mathbf{x}.\mathbf{C}(\mathbf{x}) \wedge \forall w'' \in seem_{w,b}$:
$x(w'') = m)(w))$ *of type t*

To turn this truth value into a proposition, abstraction over w is needed.

r. λw.Bumped-into$_w$(alex, $\sigma(\lambda \mathbf{x}.\mathbf{C}(\mathbf{x}) \wedge \forall w'' \in seem_{w,b}$:
$\mathbf{x}(w'') = m)(w))$ *of type* $<s,t>$

In words: *Alex bumped into the value at w of the contextually selected individual concept whose value in Bill's seem-worlds is Mary.*

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Competing interests

The author has no competing interests to declare.

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