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Clausal Subordination and the Structure of the Verbal Phrase

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Abstract: In his first approach to recursion in clausal embedding, Chomsky (1957) postulates a proform in the matrix clause linked to an independently constructed clause that, via an application of the generalised transformation, eventually becomes the matrix verb's complement. Chomsky (1965) replaces this with a direct clausal embedding analysis, with clausal recursion in the base component of the grammar. I argue here that, while direct clausal recursion is certainly needed, an update to the Chomsky's (1957) approach (minus the application of the generalised transformation) deserves a prominent place in syntactic theory as well. The discussion is based on data from Dutch, German, and Hungarian. This paper addresses the role of presuppositionality in the context of clausal coordination, the analysis of the so-called *wh*-scope marking construction, and the importance of Agree in connection with a subordinate clause's transparency or opacity to extraction. Central in the analysis is a perspective on the structure of the verbal phrase which accommodates two discrete structural positions for the object.

Keywords: clausal subordination; proform; object positions; recursion; presuppositionality; *wh*-scope marking; Agree

1. Introduction

In the first approach to recursion in clausal embedding in the transformational-generative framework (see [1]), the matrix clause contained a proform linked to an independently constructed clause that, after association with the proform and subsequent elimination of this proform via the generalised transformation, ended up serving as the subordinate clause. (1) sums this up.

1. a. John believes that Mary is pregnant
   John believes that Mary was kissed by Bill

   b. [$_S$ John believes it]
   [$_{S'}$ that [$_S$ Mary is pregnant/was kissed by Bill]]

   c. [$_S$ John believes [$_{S'}$ that [$_S$ Mary is pregnant/was kissed by Bill]]]

In [2], Chomsky abandons this proform-based approach to clausal recursion, and substitutes it with a direct clausal embedding analysis: the matrix verb selects the subordinate clause directly as its object, in the base component, which includes a base rule rewriting VP as V + S'. Appropriately updated, the *Aspects* approach is a staple of mainstream generative theory today—and there can be no doubt that we need it. But there is reason to believe that an update of (1b), the hallmark of the *Syntactic Structures* approach [1], deserves a prominent place in current syntactic theorising as well.

In this paper,[1] I will present an analysis of clausal subordination that mobilises both direct recursion and a proform-based strategy, each addressing different subspecies of embedding of a clause within a larger clause. The empirical discussion will be based on data from Dutch, German, and Hungarian. This last language is particularly informative thanks to the fact that (to recycle the old adage used frequently with reference to Hungarian in other contexts) it wears (1b) on its sleeve.

This paper is structured as follows. In Section 2, I begin by looking at the role of presuppositionality in the context of clausal coordination, showing that in Hungarian the distribution of a proleptic pronoun associated to the clause (very much as in (1b)) plays a key part in determining whether the subordinate clause gets a presuppositional reading or not, whereas in Dutch it is the placement of the subordinate clause *vis-à-vis* the verbal cluster that determines this. Section 3 provides a structural perspective on object positions and presuppositionality which allows us to understand the empirical picture emerging from Section 2. In Section 4, I subsequently apply the insights gained from Sections 2 and 3 to an analysis of the so-called *wh*-scope marking construction, with particular emphasis on German and Hungarian. Section 5 adds a note on the role of Agree in determining whether a subordinate clause is transparent or opaque to extraction. Section 6 concludes.

2. Clausal Subordination and Presuppositionality

Hungarian clausal subordination constructions participate in three different syntactic patterns. In one, which looks very much like what we find in English, the matrix verb combines directly with the subordinate clause. We see this in the a-examples in (2) (for *hisz* 'believe', a bridge verb in the sense of [4]) and (3) (for *beismer* 'confess', a factive verb). In the second pattern, the verb combines with an accusative pronoun (*azt* 'it. ACC') in addition to the subordinate clause. This is illustrated in the b-examples in (2) and (3). The third pattern differs from the second in featuring the proform *úgy* 'so' in lieu of *azt*, and in being available only for bridge verbs: (3c) is ungrammatical.

2. a. János hiszi, hogy Mari terhes (Hungarian)
   János believes that Mari pregnant

   b. János *azt* hiszi, hogy Mari terhes
   János it-ACC believes that Mari pregnant

   c. János *úgy* hiszi, hogy Mari terhes
   János so/thus believes that Mari pregnant
   'János believes that Mari is pregnant.'

3. a. János beismeri, hogy Mari terhes (Hungarian)
   János admits/confesses that Mari pregnant

   b. János beismeri *azt*, hogy Mari terhes
   János admits/confesses it-ACC that Mari pregnant

   c. * János beismeri *úgy*, hogy Mari terhes
   János admits/confesses so/thus that Mari pregnant
   'János admits/confesses that Mari is pregnant.'

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[1] This paper is based on Sections 2.3 and 3.4.3 of [3], to which the reader is referred for additional discussion, within the broader context of the question of whether syntactic structures are built from the bottom up (as in mainstream generative approaches) or from the top down.

The interpretation of (2a) is not necessarily the same as that of (2b) or (2c): when *azt* or *úgy* is absent, the *hogy* 'that' clause in bridge-verb constructions has a strong tendency to be interpreted as denoting "a proposition (without a necessary commitment to its truth) about which the complex sentence makes an assertion", in the words of de Cuba and Ürögdi [5] (p. 37). De Cuba and Ürögdi show convincingly that the proposition denoted by the embedded clause in sentences of the type in (2a) is not presupposed to be *true* (it can in fact be known to be a lie), so the effect of omitting *azt* or *úgy* in (2) is not equivalent to "factivity" (cf. (3)). But the content of this proposition does have to be taken to be part of the common ground—and it is in this sense that I will use the term "presuppositional" in this work (close to de Cuba and Ürögdi's "referential", though by their own admission that their evidence that the CP in sentences such as (2a) is a referring expression is "impressionistic at best" [5] (p. 45)). Thus, the *hogy* 'that' clause in bridge-verb constructions lacking proleptic *azt*/*úgy* shows a strong tendency to be interpreted presuppositionally, similar to but not quite in the same way as in factive-verb constructions. In factive-verb constructions, *azt* can be absent or present (cf. (3a,b)); but the other proform, *úgy*, cannot be used.[2]

So in Hungarian, though both bridge verbs and factive verbs allow their subordinate clause to co-occur with the proform *azt*, the absence of this pronoun usually has a presuppositionalising effect on the embedded clause in the case of bridge verbs. In Dutch, we see a similar presuppositionalising effect with bridge-verb complements, this time manifesting itself in terms of linear order. When a subordinate clause is placed in the *Mittelfeld*, to the left of the verbal cluster, it is obligatorily interpreted presuppositionally: thus, the interpretation of (4a) is on a par with that which reference [5] describes for Hungarian (2a); to get the "ordinary" non-presuppositional interpretation, the subordinate clause has to be placed in the *Nachfeld*, following the verbal cluster. For factive verbs (5), placement of the subordinate clause to the left or to the right of the cluster has no interpretive effect. Although placing a finite clause in the *Mittelfeld* is always a marked option in Dutch, the result is typically less marked with factive verbs than with bridge verbs, precisely because a presuppositional interpretation for the subordinate clause is guaranteed with factives.

4.	a.	dat	Jan	[dat Marie zwanger is]	gelooft	(Dutch)
		that	Jan	that Marie pregnant is	believes	
	b.	dat	Jan	gelooft	[dat Marie zwanger is]	
		that	Jan	believes	that Marie pregnant is	
5.	a.	dat	Jan	[dat Marie zwanger is]	betreurt	(Dutch)
		that	Jan	that Marie pregnant is	regrets	
	b.	dat	Jan	betreurt	[dat Marie zwanger is]	
		that	Jan	regrets	that Marie pregnant is	

These contrasts between bridge-verb and factive constructions point to an important structural difference between factive and non-factive constructions with regard to the way the syntax integrates the subordinate clause into the structure of the complex sentence. A proper syntactic understanding of how this comes about will tell us a lot about the way clausal subordination works in natural language, and how the grammar should operate in order to deal adequately with the syntax of clausal hypotaxis.

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[2] While it is entirely beyond dispute that *úgy* is entirely unusable in factive constructions, de Cuba and Ürögdi [5] (p. 39), assert that *azt* can be used in factives only when it (and hence its associate, the embedded clause) is contrastively focused, and is deviant in a neutral sentence. De Cuba and Ürögdi base this claim on examples (featuring the verb *sajnál* 'regret') in which *azt* is in an immediately preverbal position, for which it is indeed true that *azt* has to be focused. But from (3b), it is immediately apparent that it cannot be claimed in general that when *azt* is present in factive constructions, it must be contrastively focused: in (3b), postverbal *azt* is grammatical and unmistakably not a contrastive focus. I take (3b) to establish that there is no focus condition at work on the use of *azt* with factive verbs.

3. Object Positions, Proforms and Presuppositionality

In this section, I argue that the observations about Hungarian and Dutch made in Section 2 translate structurally into a syntactic analysis in which the verb phrase accommodates two object positions—much like the way the clause accommodates (at least) two subject positions. One object position is the familiar complement-of-V position; the other is a specifier position—either the specifier of the projection of the verbal root (VP) or that of a functional category (e.g., AspP) projecting between *v* and VP. For simplicity (and since nothing hinges on the choice between these options here), I will work in this paper with the structure in (6), where the higher of the two object positions is SpecVP (see [6–12], i.a., for relevant discussion).

6. a. $[_{vP}$ SUBJECT $[_{v'}$ *v* $[_{VP}$ <OBJECT> $[_{V'}$ V <OBJECT>]]]]

Whenever the occupant of SpecVP is an argument (i.e., receives a θ-role in this position), it is interpreted presuppositionally—i.e., outside the domain of existential closure (see [13]), which, for the object in (6), is the V′ (see [3] (Section 2.3.1.2) and [12] for discussion).[3]

This link between the thematic object's occupancy of SpecVP and its presuppositional interpretation immediately addresses the contrast between (4a) and (4b) in Dutch. When the subordinate clause appears in SpecVP, it surfaces to the left of the verb (which, in non-root contexts, is spelled out at V in Dutch) and occurs in the *Mittelfeld*; it obligatorily receives a presuppositional interpretation, thanks to being outside V′. On a non-presuppositional interpretation, the subordinate clause is in the complement-of-V position, which, for clauses, is linearised to the right of the verb in Dutch.[4]

The structure in (6), with its two positions for objects, also helps us solve the puzzle posed by the Hungarian examples in (2) and (3). The proposal runs as follows.[5]

With factive verbs such as *beismer* 'admit/confess', SpecVP is always projected, because the complement-of-V position is occupied by a secondary predicate headed by "FACT"—a development of the classic approach to factives in [16], but with FACT now serving as a secondary predicate at the level of the VP (rather than as the head of a complex noun phrase, as in Kiparsky and Kiparsky's original proposal).[6] The occupant of SpecVP is the subject of V + FACT. Just as in copular sentences, this subject can be either the subordinate CP itself (cf. [*that Mary is pregnant*] *is a fact*) or a proform

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[3] A reviewer asks how the text statement jibes with the grammaticality of *John never gave a unicorn a bath*, for which the existence of unicorns is not presupposed. The reviewer's question is built on the premise that in the double-object construction, the indirect object occupies the SpecVP position in (6). However, although I follow [6] in exploiting both the complement-of-V position and the SpecVP position for objects, I am not a proponent of his proposal for the syntax of ditransitives. In [14], I argue in depth for an analysis of ditransitives and dative shift, mobilising a small clause in the complement of V. The indirect object is thus not (necessarily) in the SpecVP position; and even if at some point it does end up there, the occupant of SpecVP will be a predicate (a null-headed PP containing the Goal; [14], not an argument. So the indirect object is perfectly welcome to be non-presuppositional.

[4] On the linearisation of V *vis-à-vis* a CP in its complement, see Biberauer et al.'s Final-over-Final Constraint (FoFC) [15] in (i), and also [3] (Section 2.3.1.5). *Final-over-Final Constraint*. A head-initial category cannot be the immediate structural complement of a head-final category within the same extended projection

[5] With regard to the underlying representations adopted, this proposal is very different from the approach that de Cuba and Ürögodi [5] take to largely the same set of facts. For them, the key difference between what they call "referential" and "non-referential" complement clauses (for me, "presuppositional" and "non-presuppositional" ones) lies in their size: referential ones are CPs, the others are *c*Ps embedding CP, in a "CP-recursion" kind of configuration. The specifier position of each of these clauses provides a base position for a "clausal expletive", whose interpretation depends on its insertion site. See footnotes 2 and 7 in this paper for a critique of some of the details of [5].

[6] One might think (as did one of the reviewers of this paper) that to accommodate both the analysis of factive-verb constructions and that of complex noun phrases of the type *the fact that S*, the present approach needs two different structures for *fact*/FACT: (one as in (7), the other as a head taking CP as its complement. I emphasise, however, that the classic clausal complementation analysis for *the fact that S* is arguably incorrect, and that a structure in which *fact* is a predicate of the *that*-clause, along the same lines as (7a), is superior (see [17,18] for discussion). Thus, rather than modelling the analysis of factive-verb constructions on the classic complementation approach to *the fact that S*, my proposal models the analysis of *the fact that S* on that in (7a). In this way, the present analysis preserves Kiparsky and Kiparsky's elegance of a single structure pertaining to both constructions involving *fact*/FACT [16].

linked to an extraposed CP outside VP (cf. *it is a fact* [*that Mary is pregnant*]).[7] Whenever it occurs in factive-verb constructions, the pronominal proform is a thematic argument of the complex predicate formed by the verb and the secondary predicate FACT.

Since with factive verbs the complement-of-V position is always occupied by the abstract secondary predicate FACT, this position is never available for the subordinate CP. In (7a), the CP occupies the SpecVP position. The secondary predicate FACT, occupying the complement-of-V position, forms a complex predicate with V and introduces its argument in SpecVP.[8] In (7b), the argument of the complex predicate V + FACT is the proform occupying SpecVP, coindexed with the CP in extraposed position. So in factive-verb constructions, the CP is always associated with the θ-role assigned to SpecVP, which ensures that it is always given a presuppositional interpretation, regardless of which of the two structures in (7) is built.[9]

7. a. $[_{vP}$ SUBJECT $[_{v'}\ v\ [_{VP}$ <OBJECT> $[_{V'}$ V <OBJECT>]]]]

   b. $[_{vP}$ SUBJECT $[_{v'}\ v\ [_{VP}$ PROFORM$_i$ = ARG $[_{V'}$ V $[_{PRED}$ FACT]]]]] $[_{CP}$ ... $]_i$

With verbs such as *hisz* 'believe', when *azt* is not present, the subordinate clause has a choice of positions: it can either take the complement-of-V position, as in (8a.*i*), or be mapped into the SpecVP position, so that it comes to behave exactly like the object clause of a factive verb (cf. (7a) and (8a.*ii*)). (Of course a blend of (8a.*i*) and (8a.*ii*), with a CP in each of the two positions in the VP, is uninterpretable: V's argument structure accommodates no more than one propositional argument).

8. a.*i* $[_{vP}$ SUBJECT $[_{v'}\ v\ [_{VP}$ V $[_{CP}$ ...]]]]

   a.*ii* $[_{vP}$ SUBJECT $[_{v'}\ v\ [_{VP}\ [_{CP}$ ...] $[_{V'}$ V]]]

Hungarian speakers, for whom the presuppositional interpretation of the *hogy*-clause in (2a) is categorical, select (8a.*ii*) over (8a.*i*) whenever no proform is present.[10] But categorical presuppositionality for (2a) is not the norm: it is, for most speakers, merely a strong tendency (as I noted in the paragraph below (3)). With verbs such as *hisz* 'believe', it will usually be possible to map the subordinate clause into the complement-of-V position.

Whenever *azt* is present with verbs such as *hisz* 'believe', it once again occupies SpecVP, just as in constructions with factive verbs. But whereas in factive-verb constructions *azt* is an argument of the complex predicate V + FACT, in bridge-verb constructions this *azt* is not an argument but a secondary predicate for the complement clause occupying the complement-of-V position, as in (8b), which recalls

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[7] Regarding the relationship between the proform and the extraposed CP, and the structural position of the extraposed CP, I am partial to an asyndetic coordination approach along the lines of [19,20]. The sharing of presuppositionality between the proform and the peripheral CP is straightforward in this approach: asyndetic specification generally evinces a matching of the referential properties of the proform and the associate (cf. Dutch *ik zoek hem, die vent van hiernaast/* iemand van hiernaast* 'I am looking for him, that guy next door/* someone next door' vs. *ik zoek wat, iets lekkers* 'I am looking for something, something delicious'). For de Cuba and Ürögodi [5], the proform in the specifier of *c*P or CP "inherits the properties of the phrase it stands for. In particular, we suggest that there is Spec-Head agreement for referentiality in clausal complements" [5] (p. 42). This proposal is technically problematic. Referentiality (or specificity or presuppositionality) is not a property of C: it is a property of the clause. One never finds that interpretive (i.e., semantic or pragmatic) properties of phrases are shared with their specifiers (thus, consider the following question–answer pair: A: *what did you see?* B: *I saw* [*it* RAIN]—here *it* is not referential, hence not focused, but it legitimately serves as the specifier of the focused constituent corresponding to *what* in the question).

[8] The V-head in this VP structure can be thought of as a contentful RELATOR of the secondary predicate and its subject. One of my reviewers asks why the secondary predicate in (7) cannot be overt when a factive verb spells out V (* *I regret that she is pregnant a fact*). It CAN be when an epistemic verb such as *consider* lexicalises V (*I consider that she is pregnant a fact*). This suggests an answer to the reviewer's question: factive verbs are composites of V and FACT.

[9] A reviewer wonders why there should be an alternation between (7a) and (7b). A fact regarding the distribution of CPs (holding for both English-type languages and Hungarian) is that they often avoid being in specifier positions and "extrapose" instead, with a proleptic pronoun taking the argument position, as in (7b). Why CPs avoid specifier positions remains unclear, especially because this is not an absolute ban.

[10] On a top-down approach to structure building (see [3] and references there), this preference for (8a.*ii*) over (8a.*i*) can be understood as the desire to insert CP into the first possible position within VP.

Moro's analysis of sentences such as *it's that she's pregnant*, for which he treats *it* as the predicate of the *that*-clause [21].[11]

8. b. $[_{vP}$ SUBJECT $[_{v'}\ v\ [_{VP}$ PROFORM=PRED $[_{V'}$ V $[_{CP}$ ...]]]]]

In (8b), even though the SpecVP position is occupied, we get no presuppositional reading for the subordinate clause. That is because the subordinate clause itself occupies the complement-of-V position, which is within the nuclear scope (V'), and SpecVP is occupied by a predicate, not by the CP or a placeholder for it. Even with the predicate being assigned a presuppositional interpretation in the semantics, this does not accrue to its subject: in a copular inversion construction such as *the winner must be someone from New York*, the fact that the predicate nominal occupies SpecTP, a position outside the nuclear scope, does not prevent the notional subject *someone from New York* (which is inside the nuclear scope) from being interpreted non-specifically.

As far as the distribution of presuppositional readings in bridge and non-bridge constructions is concerned, the analyses in (7) and (8) make exactly the right predictions. This analysis of the bridge/factive dichotomy also directly explains the fact that *azt* alternates with *úgy* 'so' in bridge-verb constructions but not with factives (recall the c–examples in (2) and (3)). This falls out once we realise that *úgy* 'so' is always a predicate: it has no argumental functions. Placing *úgy* in SpecVP in (7b) would cause a clash between the fact that a θ-role is assigned to this position by the complex predicate V + FACT and the fact that *úgy* tolerates no θ-role. In (8b), by contrast, *azt* plays a predicational role; replacing it with *úgy* should be perfectly fine, and indeed it is, as we saw in (2c). We see the same alternation between *az* and *úgy* with semi-copulas such as *látszik* 'seem/appear', as in (9). Here, since there is, in fact, no other predicate around (*látszik* is merely a copula), *az* and *úgy* play the role of primary predicate for the *hogy*-clause.

9. a. *az* látszik, hogy Mari terhes (Hungarian)
it seems that Mari pregnant

b. *úgy* látszik, hogy Mari terhes
so seems that Mari pregnant
both: 'it seems/appears that Mari is pregnant.'

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[11] Moro projects *it* in *it's that she's pregnant* as the predicate of a canonical predication structure, and has it change places with its subject (the CP) via predicate inversion [21]. In (8b), I model the predication relation between *azt* and the CP as a "reverse predication" or "predicate-specifier structure", in the sense of [17]. The fact that *azt* in SpecVP in (8b) has accusative case and controls definite agreement with the matrix verb does not subtract from its treatment as a secondary predicate. Predicates in Hungarian often host case morphology. When they serve as primary predicates of a finite clause, as in (i.a), they are nominative (which is morphologically invisible), under concord with the nominative subject; when they find themselves in the complement of a verb such as *tart* "consider", the case they bear is dative (see (i.b)), because that is the case that the RELATOR of the secondary predication relation below *tart* happens to assign (put differently, the RELATOR = *-nak*; see [17]. In general, predicates in Hungarian take on the case that is available to them in their structural environment. In the structural environment in which *azt* occurs in (8b), *azt* is the closest potential goal for *v qua* accusative case assigner. Because the proform in (8b) is in a structural case relation with *v*, it also controls definiteness agreement with the finite verb—which hence comes out with definite inflection. When *úgy* 'so' occupies the SpecVP position instead of *azt* (recall (2c)), a definiteness agreement and accusative case assignment relation between it and *v* is impossible because *úgy* is not nominal. So *v* skips *úgy* altogether, and targets the CP in the complement-of-V position as its Agree-goal when *úgy* is present instead of *azt*.

i. a. magyar vagyok, és az apám is *az* volt (Hungarian)
Hungarian am and the father. 1SG(NOM) also it(NOM) was
'I am Hungarian, and my father was, too.'

b. magyar vagyok, és *annak* is tartom magam
Hungarian am and it. DAT also feel myself
'I am Hungarian, and so I feel, too.'

A reviewer points to two respects in which the distributions of the proleptic proforms *azt* and *úgy* are different in the realm of bridge-verb constructions. One is that insertion of sentential negation in (2c) is ungrammatical while it is perfectly fine in (2a). The examples in (10) (provided by the reviewer and verified by me with another native speaker) illustrate this:

10. a.	*azt*	nem	gondolta,	hogy	Mari terhes		(Hungarian)
	it.ACC	not	thought	that	Mari pregnant		
b.	* *úgy*	nem	gondolt,	hogy	Mari terhes		
	so/thus	not	thought	that	Mari pregnant		
	'he doesn't think that Mari is pregnant.'						

The other difference between *azt* and *úgy* with bridge verbs is that the string *azt+hogy*-clause can be fronted as a unit (either via ordinary topicalisation or via left dislocation; in the latter case, *János* is immediately preceded by a resumptive proform—the second *azt* in (11a)) while fronting of the string *úgy+hogy*-clause is impossible:

11. a.	*azt*,	hogy	Mari terhes,	(azt)	János	is	mondta	(Hungarian)
	it. ACC	that	Mari pregnant	it. ACC	János	also	said	
b.	* *úgy*,	hogy	Mari terhes,	(azt/úgy)	János	is	mondta	
	so/thus	that	Mari pregnant	it. ACC/so	János	also	said	

These two observations are probably relatable to a single factor: movement of *úgy*. The grammaticality of (11a) suggests that *azt* can stay within the node in which it forms a constituent with the *hogy*-clause;[12] the ill-formedness of (11b) suggests that *úgy* cannot. If, indeed, *úgy* must leave its base position, the ungrammaticality of (10b) falls out as a case of intervention (an "inner island" effect in the terminology of [22]): *úgy*, a non-referential expression (a predicate), must move out of the verb phrase but in so doing crosses the negation operator, which blocks the relation between the moved *úgy* and its trace. The grammaticality of (10a) (which has the same linear order as (10b): *azt*, too, is to the left of *nem* "not") is then left to be dealt with. One possibility would be to assign this *azt* referential (hence argumental) status (so that it is immune to the inner island)—which would lead to a presuppositional interpretation of CP. Alternatively, *azt* is, like *úgy*, a predicate, but unlike *úgy* in (10b), the *azt* in (10a) has not crossed over the sentential negation operator: though it occurs to the left of *nem*, the morphological marker of sentential negation, it remains below the abstract operator (outside TP) supplying the semantics of negation (see [3] (chapter 3) for some relevant discussion). These remarks are tentative. There clearly is much more to be said about these examples. They should be revisited in future research.

The analyses of clausal subordination in (7) and (8) and the brief remarks about (10) provide a natural launching pad for an approach to so-called *wh*-scope marking constructions that finds a natural home for the "*wh*-expletive" that occurs in them.[13] I turn to this next.

4. On the Syntax of *wh*-Scope Marking

In the *wh*-scope marking constructions (also known as partial *wh*-movement constructions) in (12a) (from German) and (13a) (from Hungarian), we are dealing with root *wh*-questions in

[12] On the analysis for prolepsis with *azt*/*úgy* proposed in (8b), the string PROFORM + CP can front as a constituent by way of "remnant verb phrase" movement, with *azt, hogy Mari terhes* in (11a) minimally instantiating a remnant VP and *azt* sitting in SpecVP. (Given that the verb raises to a position quite high up the tree in (11a), the constituent dominating *azt* + CP and excluding the verb could even be *v*P.) Much of what I say in the rest of this paragraph can be transposed, *mutatis mutandis*, to de Cuba and Ürögodi's analysis [5], with "SpecCP" or (on a treatment of *azt* in (10a) as a referential element, as in the first alternative for the analysis of (10a) mentioned below) "SpecCP" substituted for "SpecVP".

[13] De Cuba and Ürögodi also discuss the link between proleptic *azt* and the "*wh*-expletive" *mit* [5].

which the *wh*-constituents *wer* and *ki* have matrix scope, just as in the long-distance *wh*-fronting constructions in (12b) and (13b) (which are dispreferred, to a greater or lesser degree, whence the "%"). But in (12a) and (13a), the *wh*-operators *wer* and *ki* are not at the left edge of the matrix clause: their scope is marked by an "expletive" *wh*-element corresponding to English *what*.

12. a. *was* glaubt Hans, *wer* schwanger ist? (German)
what believe Hans who pregnant is

b. % *wer* glaubt Hans, dass ___ schwanger ist
who believe Hans that pregnant is
both: 'who does Hans believe is pregnant?'

13. a. *mit* hisz János, hogy *ki* terhes? (Hungarian)
what believe.3SG.INDEF János that who pregnant

b. % *ki* hiszi János, hogy ___ terhes?
who believe.3SG.DEF János that pregnant
both: 'who does János believe is pregnant?'

In Hungarian, it is clear that the verb agrees with this "*wh*-expletive" and assigns case to it: *mit* in (13a) bears the accusative case particle *-t*, and the inflectional form of *hisz* 'believe' is from the indefinite/subjective agreement paradigm, unlike what we see in (13b), where *hiszi* agrees in definiteness with the finite subordinate clause (which the grammar of Hungarian treats as definite). This property of (13a) makes it plausible to assume that upstairs, (13a) is the *wh*-counterpart to (2b), with *mit* replacing *azt* (see [23] for the original insight): while accusative *azt* is definite and triggers a form of the matrix verb from the definite/objective conjugation, accusative *mit* is indefinite and cooccurs with indefinite/subjective inflection. Thinking of (13a) along these lines, and bearing in mind the treatment of *azt* in (2b) presented in (7b), we immediately procure an analysis of the *wh*-scope marking construction that finds a home for the "*wh*-expletive": it originates in the SpecVP position, with the subordinate clause occupying the complement-of-V position.

Rizzi [24] notes that German *wh*-scope marking constructions with bridge verbs resist the presence of a sentential negation in the upstairs clause (see also [25], [26] (p. 378)), in contradistinction to their long *wh*-fronting counterparts:

14. a. * was glaubst du nicht, mit wemHans sich dort treffen wird? (German)
what believe you not with whom Hans REFL there meet will

b. mit wem glaubst du nicht, dass Hans sich dort treffen wird?
with whom believe you not that Hans REFL there meet will
'who don't you think that Hans will meet there?'

In Hungarian, this effect of negation also manifests itself clearly in the *wh*-scope marking construction: (15) is systematically rejected when *nem* is included in it (see [23]). What is particularly interesting in the context of the discussion earlier in this paper, however, is that Horvath points out that the *wh*-scope marking construction in (16a) is immune to the presence of matrix negation while long A'–fronting of the meaningful *wh*-constituent across the negation leads to an ill-formed result, as shown in (16b) [23] (p. 536).

15. mit (* nem) gondolsz, hogy ki fog elmenni? (Hungarian)
what-ACC not think-2SG.INDEF that who(NOM) will PV-go

16. a. mit nem ismert be János, hogy hányszor hamisította az aláírásodat? (Hungarian)
what not admitted János that how.many.times forged the signature-2SG-ACC

b. * hányszor nem ismerte be János, hogy hamisította az aláírásodat?
'how many times didn't János admit that he had forged your signature?'

The ungrammaticality of (16b) is an inner island effect induced by overt-syntactic fronting of a non-argumental *wh*-expression.[14] The intervention effect seen in (15) and also in German (14a) can be assimilated to (16b) if the *wh*-scope marker (German *was*, Hungarian *mit*) is a non-argumental *wh*-operator in these cases. By this logic, *mit* in (16a) should be an argumental *wh*-expression: otherwise, it would be difficult to account for its immunity to *nem*-intervention.

The difference between the intervention-sensitive examples of the *wh*-scope marking construction in (14a) and (15), on the one hand, and the sentence in (16a), on the other, lies in the nature of the matrix verb (non-factive *glauben*, *gondol* 'think' versus factive *beismer* 'admit, confess')—and, concomitantly, in the (non-)presuppositional nature of the complement clause. This is systematic: whenever a matrix verb is used whose CP complement is presuppositional (or D-linked, in Horvath's terms [23]), no intervention effect manifests itself in the *wh*-scope marking construction.

We can make immediate sense of this in light of the discussion in Section 3. There, I argued that the complement position of a factive verb is always taken by an abstract secondary predicate FACT, and that the SpecVP position is occupied by the argument of that secondary predicate—the subordinate clause itself, or a proleptic object (in which case the clause is merged as a satellite; see fn. 7). An argumental expression in the SpecVP position receives a presuppositional interpretation. Thus (7a), above, directly accounts for the presuppositional status of the factive object clause. And (7b) does so indirectly, by interpreting the proform as presuppositional/D-linked, and having the clause associated to it via a relationship of apposition. It is (7b) that, by realising the proform as the *wh*-element *mit*, gives rise to the *wh*-scope marking construction in (16a). The thing to note is that *mit* here is an argumental *wh*-expression, immune to the inner island set up by the negation.

In the syntax of bridge-verb constructions with a place-holder for the complement clause, the proform is once again in SpecVP, as in (8b). But here, the proform in SpecVP does not play the role of an argument: it is the CP in the complement-of-V position that serves as the argument; the proform is a secondary predicate of this CP, in a reverse predication structure. The hypothesis that the proform in the SpecVP position of bridge-verb constructions is not an argumental expression had already accounted for the non-presuppositional interpretation of the complement clause in bridge-verb constructions—and it now also derives the intervention effect seen in German (14a) and Hungarian (15): building a non-argumental bare *wh*-dependency across a scope-taking element is impossible (see also (16b)).

5. A Note on *wh*-Dependencies across a Subordinate Clause

In *wh*-scope marking constructions such as Hungarian (13a), movement of the "real" *wh*-constituent into the matrix clause, across the CP "associate" of the *wh*-scope marker, is never allowed, regardless of how the "real" *wh* and the *wh*-scope marker are ordered *vis-à-vis* one another:

17. a. * *ki* *mit* hisz hogy ___ terhes? (Hungarian)
who what believe.3SG.INDEF that pregnant

b. * *mit* *ki* hisz hogy ___ terhes?
what who believe.3SG.INDEF that pregnant

[14] See [3] (Section 3.4.3) for detailed discussion and analysis of "intervention effects" with non-argument dependencies.

The ungrammaticality of the examples in (17) is arguably a consequence of the fact that the *hogy*-clause here is not an Agree-goal for the verb: the verb *hisz* in these sentences, as in (11a), bears indefinite/subjective inflection, agreeing with the scope marker *mit* rather than the finite *hogy*-clause (which is definite). As shown forcefully by Rackowski and Richards [27] and Van Urk and Richards [28], subordinate domains are transparent for extraction only if they are Agree-goals.

For speakers who are tolerant of long-distance-fronting in Hungarian, (13b) is grammatical. This falls out from the fact that the matrix verb in (13b) bears definite/objective inflection (*hiszi*), agreeing in definiteness with the *hogy*-clause from which extraction is taking place. In [3], I show in depth that the hypothesis that filler–gap dependencies can be established only across domains that serve as Agree-goals for higher probes gives us a purchase on the entire spectrum of "strong island" effects. I refer the reader to this work for details and discussion.

6. Conclusions and Consequences

A non-presuppositional subordinate clause can be generated as the verb's complement. But the grammar also countenances the possibility of base-generating a proform in the higher of the two object positions (SpecVP) and associating the subordinate clause to this proform, in the spirit of (1b): this is what happens in (7b), with factive matrix verbs. Bridge-verb constructions can mimic the structure in (7b), but the proform in (8b) has properties that are very different from those of the occupant of SpecVP in (7b): instead of being an argument, it serves as a secondary predicate for the CP, which in (8b) (unlike in (7b)) occupies the complement-of-V position.

Chomsky's original proposal for the syntax of clausal subordination (see [1]) has now morphed into an analysis that encompasses both bridge-verb and factive-verb constructions, makes sense of the distribution and form of the proforms, accounts for extraction, and takes care of the case and agreement facts. In Chomsky's original proposal, the clause associated to the proform is not merged into the structure of the complex sentence as an independent constituent, alongside the proform: rather, the subordinate clause is merged in via an application of the generalised transformation, which effaces the proform and turns the embedded clause into the verb's object. The proposal advanced in this paper has no business with the generalised transformation: the proform, whenever present, never gets replaced; the proform and the CP each occupy their own positions in the tree, with the CP to which the proform is associated sitting in the complement-of-V position in bridge-verb constructions, and in a clause-peripheral position in factive-verb constructions with an overt object pronoun.

In the structure in (8b), the proform must be merged into the structure before the subordinate CP is merged in the complement-of-V position. This is so because the predicative proform and the verbal root must form a complex predicate that takes the CP in the complement-of-V position as its subject. Such a complex predicate can only be formed, in the structure in (8b), if this structure is built from the top down. On a bottom-up derivation, CP is first merged directly with the verb, at the V′ juncture. At this point, CP is interpreted as an argument of the verb. Upon the subsequent arrival of the predicative proform in the SpecVP position, we could countenance a predication relation between the complex predicate "proform + V" only by revising the conclusion, drawn at the V′ juncture, that CP is an argument of V alone. Such a revision would amount to a derivation that is not strictly cyclic.

The top-down approach, by contrast, delivers the complex predicate "proform + V" before CP is merged into the structure. Upon merger of CP in the complement-of-V position (the last position reached in the course of the top-down structure-building process), CP is interpreted right away as the argument of the complex predicate formed by the proform in SpecVP and the V-head. No revision of a conclusion drawn earlier is necessary—the derivation proceeds strictly cyclically.

The outcome of this discussion of clausal subordination thus bears, in an important way, on the directionality of structure building. In [3], the pros and cons of top-down and bottom-up structure building and syntactic derivation are discussed at much greater length. The interested reader is referred to this work for further details.

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