ON BRIDGE REQUIREMENTS IN ENGLISH

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ABSTRACT

A minimalist analysis of island conditions and bridge requirements on wh-movement in English is proposed. It has been traditionally assumed within the generative framework that wh-movement is impossible or degraded across a range of structurally analysable configurations (islands) and acceptable elsewhere (bridges). Structures meeting the configurational requirements but nevertheless having a degraded grammaticality status (non-bridge constructions) were, not rightly, banished from the scope of syntactic research proper. With the advent of minimalism, a syntactic account of non-bridge constructions can be achieved. The paper employs and modifies ideas from, among others, Chomsky (1998 and 1999), Uriagereka (1999), and Franks (2000) to show that the time of merging of a given constituent is crucial for its islandhood. Thanks to a minimalist perspective taken here, unification of bridge and island conditions seems possible. Also, a reinvestigation of Erteschik's (1973) verb typology is offered with an interim conclusion that that factivity of verbs with complement clauses is a decisive factor for their island status.

KEYWORDS: bridge verbs; minimalist syntax; wh-movement; successive cyclicity.

1. Introduction

The present paper attempts to specify the conditions for wh-extraction from finite complement clauses in English in the light of the latest minimalist assumptions. Ever since the earliest accounts concerning wh-movement it has been observed that not all structures containing wh-phrases can be transformed into acceptable wh-questions. Strictly structural constraints have been held responsible for the impossibility of wh-extraction out of such categories as complex noun phrases, adjunct phrases, subjects, or dependent interrogative clauses to name just a few. The pre-minimalist apparatus of constraints based on the ECP, intervention effects, barriers etc. was quite successful at ruling out some of the unwanted wh-constructions; nevertheless, it never managed to account for all inconsistencies and ungrammaticalities. And so, the theoretical apparatus of GB would impose a parallel treatment of sentences like (1a) and (1b):

(1a)   **What do you wonder how she cut?
(1b)   ?What do you wonder whether she cut?

In both cases the intermediate CP specifiers are occupied by wh-elements. Both (1a)
and (1b) are assumed to violate subjacency, the striking difference in grammaticality be-
tween them remaining largely unexplained.

On the other hand, a clear discrepancy in the acceptability of sentences like (2a) and
(2b), exemplifying the so called bridge/factive asymmetry, must be ignored, as no inter-
vention effects or any apparent structural differences are present:

(2a)   What do you think he likes?
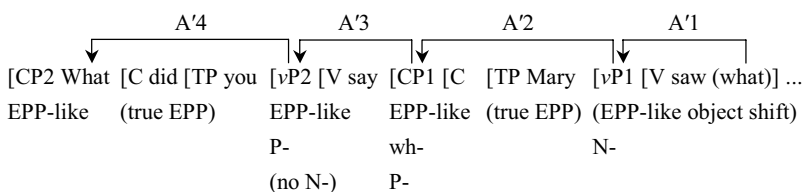(2b)   *What do you know (that) he likes?

The same is true of CNPC violations, whose severity can vary without apparent struc-
tural reasons.

It is interesting to see how much effort, in contrast, was put into accounting for the
argument-adjunct asymmetry, exemplified by (3a) and (3b).

(3a)   (?)*What were you wondering how you should fix?
(3b)   *How were you wondering what you should fix?

In the light of the latest minimalist assumptions the wh-movement phenomena deserve
a reconsideration, even more so if one considers the above inconsistencies entailed by
the GB system. With the strictly derivational minimalist procedure, as scheduled in
Chomsky (1998, 1999), the previous GB solutions are no longer available. What seems
to be left is subjacency, now defined in terms of CP and *v*P phases identical for any
operation, and feature makeup of the elements involved in the derivation. Chomsky
(1998: 24) provides a procedure for the derivation of grammatical long wh-questions,
which, if applied, would probably yield results akin to the diagram (4) below with the
proceeding of wh-movement marked by arrows:

(4)

	A′4		A′3		A′2		A′1

[CP2 What [C did [TP you [*v*P2 [V say [CP1 [C   [TP Mary [*v*P1 [V saw (what)] ...
EPP-like   (true EPP)   EPP-like   EPP-like (true EPP) (EPP-like object shift)
                           P-   wh-   N-
                           (no N-)   P-

The extra features at the edges of CP1 and *v*P1 and *v*P2 phases are labelled as EPP-like,
or Peripheral (thus P) features. The moving wh-phrase is equipped with a set of features

to be checked at the edge of each strong phase. Apart from the Q feature which enters into a checking relation with the matrix interrogative spec CP bearing a matching Q feature, the wh-element is thus assumed to also contain a number of EPP-like wh-features, each checking the corresponding wh-feature of the relevant functional category (*v* and C). The above system, having removed the feature elimination inconsistency of the indirectly feature-driven movement of Chomsky (1995), leaves an even more serious problem unresolved, namely, the fact that a given wh-phrase is equipped with as many EPP-like features as there are phases in a given derivation. It weakens the whole system, entailing the look-ahead effect. As can be seen, the configuration in (4) is rather complicated for a "minimalist" account. Apparently, it is not very useful in accounting for the ungrammaticality of such constructions as CNPC, as can been seen in (5).

(5a)

[CP2 Who [C did [TP you [*v*P2 [V discuss [NP a claim [CP1 [C that [TP Mary [*v*P1 [V liked (who)]

(5b)

[CP2 Who [C did [TP you [*v*P2 [V discuss [NP a claim [CP1 [CP1 which [TP [*v*P1 [V surprised (who)]

In both cases the edges of the strong phases are accessible, and the moving wh-phrase can adjoin to them, so no problems or discrepancies should arise.

Nor can the above procedure resolve the inconsistencies mentioned in the beginning. As shall be suggested, the strictly derivational minimalist procedure combined with Uriagereka's (1999) system of linearisation prior to merge of certain phrases, as well as the ideas of Franks (2000) and Stepanov (2001), will be much more promising in accounting for the ungrammaticality of a wide range of wh-constructions.

However, to achieve this aim, one should start from specifying the exact conditions where long wh-extraction is possible, the so called bridge conditions.

2. Bridge conditions

It was suggested as early as Erteschik (1973) that the allegedly unconstrained long wh-movement across finite indicative complement clauses is subject to limitations; only semantically dominant (roughly not presupposed) complements allow for the extraction while the non-dominant ones block it. The idea of dominance was assumed to be distinct from factivity, and to depend strictly on the interplay between new and given information.

Certain verbs are very unlikely to take dominant complements, rather, when they do appear in the matrix clause, this clause immediately gains dominance. Explaining why

some verbs may and others are not able to select for dominant complements is among the purposes of Erteschik's paper. Starting with an assertion that "[e]xtraction can occur only out of clauses and phrases which can be considered dominant in some context" (Erteschik 1973: 83), the author provides a list of English verbs which take *that*-clause complements and examines their extraction and dominance propensities. Table 1 contains verbs of saying which, according to Erteschik, take *that*-complements, "classified as to whether extraction is either acceptable, questionable, or bad according to a specific informant in the following example: What did you V ((to) them) that he had done?" (Erteschik 1973: 84).

Table 1. Verbs of saying which, according to Erteschik, take *that*-complements, "classified as to whether extraction is either acceptable, questionable, or bad according to a specific informant in the following example: What did you V ((to) them) that he had done?" (Erteschik 1973: 84)

acceptable	questionable	bad
say	grunt	purr
tell	holler	snarl
report	murmur	editorialize
announce	mumble	simper
	mutter	lisp
	roar	quip
	scream	croak
	shout	dictate
	sigh	transcribe
	snort	ululate
	stammer	animadvert
	wail	
	whine	
	tell	
	exclaim	

According to the author, there is a correlation between the semantic complexity of the above verbs and their acceptability in long wh-questions. The more complex the verb is semantically, the less readily will it allow for wh-movement out of its complement clause. When, on the other hand, the embedded clause can be interpreted as dominant, extraction is possible. This, however, tends to take place only when the matrix verb is relatively simple. Thus, according to Erteschik, the semantic complexity seems to be closely related to dominance, as both these conditions have similar effects; they block movement. In addition to the verbs of saying a number of factive verbs are listed by the author.

Table 2. Factive Verbs that take *that*-clause complements. (An asterisk indicates that the extraction from the complement clause of a given verb is impossible; the question mark(s), that it is degraded according to "the judgements of a specific informant" (Erteschik 1973: 90))

+factive +emotive	+factive −emotive	+/−factive −emotive
hope	know	anticipate
fear	forget	suspect
regret	take into account	report
?resent	?comprehend	remember
*rejoice	??make clear	announce
*exult	??bear in mind	deduce
*grieve		?admit
		?emphasize
		?acknowledge

Factive verbs are standardly assumed to select presupposed complements. The factivity can to a certain degree be contextual, rather than purely lexical; thus, a range of tests can be applied to distinguish between factive and non-factive verbs. One such test is exemplified below.

(6a)   John assumes that he doubtlessly will be dead by midnight, but I for one have my doubts.

(6b)   *John understands that he doubtlessly will be dead by midnight, but I for one have my doubts.

(Erteschik 1973: 13)

According to this test, the verb *understand* is, and the verb *assume* is not factive in the above context, as it is only the latter verb that allows an ambiguous interpretation with the adverb qualifying over either the speaker's, or the subject of the complement clause's attitude. In contrast, in the second sentence, the adverb *doubtlessly* can only refer to the speaker, but not the subject of the complement clause. This, shows that *assume* can have either a factive or a nonfactive reading, and *understand* is definitely factive.

The alleged correlation between semantic complexity of verbs and their extraction propensities was also assumed by (Chomsky 1977), who concluded that the unacceptability of non-bridge constructions like (2a) or (7) was of a lexical nature and, thus, of no interest for syntax. This conjecture shaped the manner of investigation into long wh-movement in EST and GB, which is rather unfortunate because, as will be suggested, it was based on a misconception.

    Although very valuable and revealing, Erteschik's (1973) work suffers from over-generalisations regarding the typology of *that*-verbs. Among the verbs the author labels as selecting *that*-clause complements many are better characterised as "quotation" verbs, and some are clearly intransitive. For contrast, Table 3 also contains a sample of English verbs admitting indicative *that*-clause complementation.

Table 3. A large representative sample of verbs allowing for *that*-clause complementation

acknowledge	conclude	forget	observe	scream
admit	confess	guess	presume	see
affirm	confirm	hear	pretend	sense
agree	conjecture	hint	proclaim	shout
allege	contend	hold	prove	show
announce	decide	hope	(quip*)	sigh
answer	demonstrate	imagine	read	signal
argue	deny	imply	realise	speculate
ascertain	determine	indicate	reason	state
assert	discover	insinuate	recall	stipulate
assume	dream	intimate	reckon	stress
believe	emphasise	know	regret	suppose
bet	establish	learn	rejoice	suspect
boast	estimate	maintain	remark	swear
brag	exclaim	mention	repeat	testify
certify	explain	mumble	reply	think
claim	fear	murmur	report	trust
comment	feel	mutter	respond	understand
complain	figure out	note	reveal	whisper
concede	find out	notice	say	write

The basic source used in creating the list was the *Link Grammar* dictionary.[1] The sample was then enlarged by several synonyms and near synonyms and also by the verbs provided by Erteschik (1973) (see Tables 1 and 2). As a result, a set of over 120 verbs was created. All the verbs were then fed through the *Brown Corpus* and their popularity

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[1] *Link Grammar* is a parsing system created by John Lafferty, Daniel Sleator (Carnegie Mellon University) and Davy Temperley (Ohio State University), theoretically related to Dependency Grammar and available at http://www.link.cs.cmu.edu/link.

with *that*-clause complementation context was assessed (all the morphological forms of verbs were used, that is, present forms, past, past participle and present participle forms).[2] The tool used for the *Brown Corpus* search was *WordSmith Concordancer*.[3] All the verbs from the sample which scored zero were re-searched with *Collins Cobuild Concordancer*, on the *Spoken English Corpus* and, if again zero was the score, the *Written Corpora*.[4] The verbs that did not appear in any of the corpora with the *that*-clause context were checked in *The New Lexicon Webster's Dictionary of the English Language* (1990) and *Collins Cobuild English Language Dictionary* (1993).

As a result of the above procedure, as many as 21 verbs labelled as allowing *that*-clause complementation by Erteschik (1973) were excluded from the list.[5] It was found that they were either intransitive (e.g. *ululate*, *coo*, *snort*), or did not admit clausal complementation (e.g. *transcribe*, *exult*). These verbs are listed in Table 4 below. In the case of these rather infrequent verbs, no context was specified in the corpora search, so as to check all the instances and to prevent cases where *that* deletion might have appeared.[6]

Table 4. Verbs not selecting *that*-clause complements according to the corpora search criteria and classified as such by Erteschik (1973)

animadvert	holler	snarl
coo	jeer	snort
croak	lisp	stammer
editorialise	purr	transcribe
eulogise	roar	ululate
exult	rumble	whine
grunt	simper	wail

It should be noted that the fact that some verbs do not allow for *that*-clause context in different English corpora, and that they are labelled as intransitive in English dictionar-

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[2] *Brown Corpus* is the standard corpus of present-day American English consisting of 1,014,312 words.

[3] *WordSmith Tools*, available at http://www.oup.co.uk/.elt/catalogu/multimed/4589846/458946.html, is an integrated suite of programs designed for text analyses

[4] *Collins Cobulid Concordancer and Sampler* are available at http://titania.cobuild.collins.co.uk/form.html. The free demo version was used for the search. The *Spoken Corpus* includes 10 million words of British transcribed speech, the *Written Corpora* include 35 million words of British and American books, ephemera, radio, newspapers and magazines.

[5] Although *quip* did not pass the *that*-complement test, probably because it is a "quotation" verb, normally used to comment on direct speech expressions, it was nevertheless included in the experimental sample, as this was one of the three verbs mentioned by Chomsky (1977) in his treatment of bridge verbs.

[6] The full outcomes of the dictionary and corpora searches can be found in Śmiecińska (2003).

ies, does not preclude their usage, or acceptance, with *that*-clause complementation by specific native speakers. By means of syntactic extension, some speakers may use verbs like *coo*, *croak*, *grunt*, *holler*, *jeer*, *lisp*, *purr*, *roar*, *rumble*, *simper*, *snarl*, *snort*, *stammer*, *whine* or *wail* as though they were identical to the verb *say* in their selection restrictions, and perhaps such were "the judgements of a specific informant" of Erteschik (1973: 90). For example, a sentence like (7):

(7)   John lisped (that) he would invite Betty.

or a question like (8):

(8)   Who did John lisp he would invite?

would be perfectly acceptable for people who know *John* and his speech impediment.

When fed through the Google search engine on the Internet, all of the verbs mentioned above did occasionally appear with *that*-clause contexts. However, these were not their regular, most popular uses, but, rather, stylistically marked expressions. For somebody whose lexicon includes entries like *wail that...*, *snarl that...*, *lisp that...* (or for that matter *quip that...*), the possibilities of long wh-extraction from the complements of such predicates could be tested. However, it is difficult to expect from anyone to accept question structures if the kernel sentences are not acceptable to him/her in the first place. That is why it was decided that verbs not appearing either in the Brown Corpus and *Collins Cobuild Corpora*, or in the *Webster's* and *Collins* dictionaries would not be included in the sample of verbs allowing *that*-clause complementation.

3.   The survey

What follows is a very brief report on a survey carried out among young native speakers of American English from Slippery Rock University, Pennsylvania, in November and December 2002, in an attempt at examining extraction propensities of verbs allowing *that*-clause complementation.[7]

All the *that*-verbs from Table 1 were used in long wh-questions. To provide a relatively uniform sample, all the questions were of a similar form. That is a full, non D-linked object wh-phrase was extracted from a finite indicative *that*-clause in most cases. The survey consisted of three parts, with one, four and twenty five native speakers participating respectively in each part.

The informants were asked to assess grammaticality of the long wh-questions and distracter sentences suggesting possible corrections. The first two parts of the survey suggested that it was not the semantic complexity of a verb that prevented its bridge-

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[7] A detailed presentation of the survey can be found in Śmiecińska (2003).

hood, as was argued by Erteschiek, but, rather its (contextual, or lexical) factivity and the presence of the complementiser *that*. Thus, long extraction out of the complement clause of *mutter* was as acceptable as the same operation taking place from the complement clause of *say* provided that the former was used without the complementiser. On the other hand, sentences containing factive verbs *know* and *prove* were rephrased (one suggested strategy was clefting) or simply marked as "odd". To eliminate the *that*-factor, in the third part of the survey, all the experimental sentences were used without the complementisers. A summary of the results is presented in Table 5. As can be seen, only six out of one hundred verbs had a comparatively degraded status (zero), with additional seventeen scoring between four and one out of five.

Table 5. The acceptability of the experimental sentences where 100% equals five

admit	5	determine	5	notice	5	understand	5
affirm	5	dream	5	observe	5	whisper	5
agree	5	establish	5	presume	5	assume	4
allege	5	estimate	5	pretend	5	state	4
announce	5	exclaim	5	proclaim	5	stress	4
answer	5	explain	5	reason	5	write	4
argue	5	fear	5	reckon	5	read	4
ascertain	5	feel	5	regret	5	prove	3
assert	5	figure out	5	remark	5	sigh	3
believe	5	find out	5	reply	5	emphasise	2
bet	5	hint	5	report	5	see	2
boast	5	hold	5	respond	5	acknowledge	1
brag	5	hope	5	reveal	5	deny	1
certify	5	imagine	5	say	5	quip	1
claim	5	imply	5	scream	5	hear	1
comment	5	indicate	5	sense	5	recall	1
complain	5	insinuate	5	shout	5	repeat	1
concede	5	intimate	5	show	5	signal	1
conclude	5	learn	5	speculate	5	trust	1
confess	5	maintain	5	stipulate	5	discover	0
confirm	5	mention	5	suppose	5	forget	0
conjecture	5	mumble	5	suspect	5	guess	0
contend	5	murmur	5	swear	5	know	0
decide	5	mutter	5	testify	5	realise	0
demonstrate	5	note	5	think	5	rejoice	0
Total							422

The most important conclusion that can be drawn from the presented data is that non-factive *that*-verbs not allowing for long wh-extraction from their complements are extremely rare, when compared to the vast number of the ones that do allow for it. Long wh-extraction will be possible on the condition that the complementiser *that* is deleted. This ensures that the verbs in question select for semantically dominant complements, and it is such complements that can be extracted from.

In the light of the above considerations, the difference in the acceptability of (2a) and (2b), repeated below for convenience:

(2a′)   What did you say (that) he ate?
(2b′)   *What did you know (that) he ate?

lies in the fact that complement clause of the first sentence is not presupposed, and thus dominant, this making the extraction possible, whereas the complement clause of the factive *know* in (2b) is presupposed and thus non-dominant in which case wh-movement will yield unacceptable results.

4.   Bridge conditions and minimalism

Finding a structural analogue of these semantic bridgehood conditions, or a useful metaphor that would distinguish between the above constructions, would be difficult given the pre-minimalist generative theoretical apparatus and the common view that bridge conditions are purely lexical and outside the scope of syntax proper. With the minimalist revolution, and its shift from configurational conditions on representations to derivational ones the problem has gained both significance and a potential for solubility.

One possible solution combines two original ideas; the first one involves NP-shell analysis of complement clauses, the other, by Franks (2000), concerns the status of the *that* complementiser.

The main idea behind the NP-shell approach probably stems from Davidson's (1969) proposal for a paratactic analysis of sentences like *Galileo said that the Earth is round*, where, as argued by the author, the *that* clause is semantically an independent unit, and the real complement of the matrix verb is the demonstrative pronoun *that*.

More recently, Stepanov (2001) has applied the NP-shell analysis for Russian and Polish finite complement clauses assuming that all finite *that*-clauses in these languages are adjuncts to (covert or overt) clausal proforms. A similar assumption concerning the status of embedded clauses is made in Kiparsky and Kiparsky (1970), where, however, only factive clauses are assumed to have underlying head nouns, and the analysis concerns English.

As regards Franks' (2000) proposal, according the author, we should not be talking of *that*-deletion, but rather *that*-insertion, in certain contexts. He argues that on mini-

malist assumptions we can posit not only cases of LF insertion of phonetically null elements, but also cases of PF insertion of semantically vacuous material, and proposes that bridge verbs take bare TP (originally IP) complements. When *that* does appear in these constructions, it is not a syntactic complementiser, but a PF reflex of the process of morphological "fission" from the TP which inserts the C node post-syntactically. Such a fission from a TP will, however, take place only under rigidly specified conditions, for instance with very frequently used verbs like *say, think*, or *believe*.

Franks (2000) discusses the following examples:
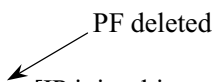
(9)   Billy thought [IP he saw a ghost].
        [CP what_i did [Billy think he saw e_i]]]?

(10)   Billy quipped [CP *(that) [IP he saw a ghost]].
        *[CP what_i did [Billy quip [CP (that) [IP he saw e_i]]]]]]]?

concluding that *quip* is a non-bridge verb because it takes a CP complement, which shows by the obligatory presence of *that*. The verb *think*, on the other hand, is a bridge verb as it takes a TP complement which correlates with the optionality of *that* and the possibility of wh-movement.

This proposal captures the data concerning *that*-deletion in a straightforward way; however, it suffers from some over-generalisations. As suggested, non-bridge verbs are better defined as verbs taking presupposed, and thus non-dominant complements. A verb like *quip* is not a good candidate for a bridge, because in its regular, unmarked usage it selects a direct speech question and usually functions as a quotation verb. In this sense, it is not a non-bridge verb, either. Second, the correlation between the presence or absence of *that* and the availability of wh-movement is slightly weakened by factive verbs, which ban the wh-extraction, but do not require *that*. As claimed by Franks (2000), factive verbs obligatorily select CP complements, but if so, one might ask why this does not correlate with the obligatory presence of the complementiser. One possible answer to the last question might be simply that in certain contexts the standard approach to *that*-deletion is on the right track, and that the *that* introducing factive complements can be PF deleted in certain contexts.

Finally, while noting that TPs are and CPs are not good candidates for wh-extraction, Franks does not propose a more general rule to explain these outcomes.

From the above considerations emerges quite a complex typology of the seemingly irrelevant function word *that*, which can be either PF deleted or PF inserted as in (11) and (12) below, respectively:

PF deleted

(11)   I know [CP that [IP it is a big problem]]].

PF inserted

(12)   Billy thought [CP *that* [IP he had seen a ghost]].

In the light of the above assumptions, the two sentences (2a) and (2b) would have completely different underlying structures and, as shall be suggested shortly, two totally different derivational histories corresponding to these structures.

(13) $What_i$ do you know [NP [CP (that) he has seen t_i?]]
(14) $What_i$ do you think [TP he has seen t_i]?

Thus, under this analysis the CPs that appear in factive complements are not direct complements to the factive verbs, but rather modifiers of abstract head nouns. What can be responsible for the differences in extraction propensities between full CPs and, arguably, bare TPs, is the fact that full CPs in factive constructions are contained in NP-shells, while TPs are complements to main predicates. Thus, questions like (15), should be ruled out on grounds similar to complement CNPC violation structures illustrated in (16).

(15)   ?*What did you know that John ate?
(16)   *What did you discuss a claim that John ate?

One difference between the two sentences is that only in (16) is the head noun overt. It is worth to notice that the parallelism between the structures is visible not only in similar extraction propensities of the two CPs but also in the obligatory presence of the complementiser in both cases and the semantic non-dominance of the clauses in question.

　　　Labelling factive complements as complex NPs reduces the number of problems to be dealt with but does not solve them. It still needs to be explained why complex NPs are not possible extraction sites.

　　　The answer to this question is rooted in a more general fact about wh-movement, namely, the well known islandhood of subjects and adjuncts as opposed to structural complements. An appealing minimalist account of CED effects is proposed in Uriagereka (1998, 1999) and Nunes and Uriagereka (2000). The underlying idea behind the approach put forward in these works is summarised succinctly in Stepanov (2001):

> If a phrase marker X was assembled in parallel with a phrase marker Y, and then X and Y were Merged, whereupon Y projects, no extraction is ever possible from X, since X becomes "morphologically opaque".
> 　　X is *assembled in parallel* with Y iff there exists a derivational point at which X and Y coexist in the derivational space, and are unconnected.
>
> 　　　　　　　　　　　　　　　　　　　　　(Stepanov 2001: 29)

The approach is related to Kayne's (1994) Linear Correspondence Axiom, In Uriagereka's (1998, 1999) system subjects and adjuncts are assumed to be built in parallel with the phrase markers with which they are merged, and as such must be linearised prior to the merger. This renders them "opaque" or "frozen" for any further operations from within.

The examples (17) and (18) below illustrate the well known subject-complement asymmetry:

(17a)   *Who did [a picture of who] amaze you?
(17b)   *Who [a picture of who] amazed you?

(18)   Who did you see [a picture of who]?

In Nunes and Uriagereka's (2000) terms, the merger of two items drawn from the numeration into the derivational space can be viewed as a colouring operation. Thus, a green-coloured NP which merges with a colourless V (heads are drawn from the numeration with no colour and take on the colour of the category with which they merge) to create a V′ will transfer the green colour to the newly formed object. At no point in the derivation does the object NP (*you* in (17) above) coexist with the structure of which it becomes a part. As opposed to this NP, the subject NP (*a picture of who* in (17)) is created as if independently in the derivational space and is assigned a different colour, e.g., red. At a certain point in the derivation the already existing objects (the green V′ and the red NP) are merged together to create a VP which will be green, as it is a projection of the now green V. The derivation continues through the *v*P stage with no complications and when the next head (T) is added to the structure creating a T′, the phrase marker is still green. Moving the subject into the specTP position means moving a red NP into a green tree. What is crucial here, however, is the fact that both the source position and the target one are of the same colour (green in this case). When the next head (C) is merged to create a C′, the whole phrase marker is still of the same green colour. Now, if movement of *who* was to take place from within the red noun phrase, the source and the target of the operation would be of two different colours. This is precisely a configuration banned by the authors.

If the extraction from a complement NP, as in (2) above, takes place no such colour mismatch occurs. The source and target of the operation are of the same colour.

In a similar spirit, adjuncts are coloured differently than the phrase markers to which they adjoin, and again, allowing for an extraction out of a yellow-coloured adjunct into a green-coloured sentence would mean creating a colour mismatch.

As the authors hold, the red–green distinction can be stated as the distinction between a phrase marker that has been linearised with the wh-phrase still *in situ* and one which has not. The [NP *a picture of who*] in (17) must be linearised before merging with the [V′ *amaze you*], otherwise its elements will never c-command the elements of the V′, which would prevent the whole structure from converging. This follows from a

linearisation requirement, inherited by the authors from Kayne (1994) (the already mentioned Linear Correspondence Axiom). If the subject NP is linearised prior to the merger, the label of the NP c-commands the elements of the V′ and the linearised NP is then a morphological "word", which means it is not accessible to syntactic operations from inside. A similar situation obtains for adjuncts, as in (19) below, which, if linearised before merging, become inaccessible big "words" with a possible wh-phrase *in situ*, and if not linearised, cause a convergence failure.

(19)   What did he go home [after he ate what]?

This can be contrasted with the derivation of (18) above, where the [NP *a picture of who*] need not be linearised before merging with *see* because the c-command relations between the verb *see* and the elements of the NP are established through the merger of the NP and V′.

The approach continues the GB tradition of grouping adjuncts and subjects together, which is now justified by the nature of the operations involved. What is important, it does not entail a look-ahead, which, on any purely feature checking accounts, would seem unavoidable.

5.   Conclusions

Analysing factive islands, CNPC islands and wh-islands as containing adjunct CPs built in parallel with the phrase markers with which they are merged allows us to account for the ungrammaticality of all of these structures and to unify them. This is in contrast to the grammatical extractions out of complement TPs which can be optionally introduced by a semantically null complementiser *that*, as argued by Franks (2000). The behaviour of structures with full CP complements (e.g., *wonder whether* clauses) under wh-extraction may be indicative of the possible phasehood of CP, which causes very slight ungrammaticality.

This way we refresh the distinction between generalised and singularly transformations, or Merge vs. Move, the above notions now being interpreted as involving application of parallel or non-parallel Merge which decides about dominance and extraction propensities of specific structures.

Coming back to the sentences in (1) and (2), which are repeated in (20) and (21), respectively. My proposal has been to combine the NP-shell analysis of non-bridge constructions (which actually have been suggested to be identical to factive ones, contrary Erteschiek's (1973) or Chomsky's (1977) beliefs) with Uriagereka's account for the distinction between adjuncts and complements.

This way, (20a) will be ruled out as involving extraction of material from a CP which was assembled in parallel with the NP to which it has been adjoined. (This ex-

ample has an almost acceptable status on an echo reading, however, on a regular information-seeking one, it is severely degraded.)

The same is true about (12b) as opposed to (11b) and (12b).

(20a)   **What do you wonder [NP [CP how [TP she cooked]]]?
(20b)   ? What do you wonder [CP whether [TP she cooked]]?

(21a)   What do you think [TP she likes]?
(21b)   *What do you know [NP [CP (that) [TP she likes]]]?

Of course, the above structural indications of the semantic dominance of different phrases should be viewed as useful metaphors rather than tangible virtual entities.

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