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Interrogative Slifting: More syntactic, less parenthetical

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In this article we re-assess the recent analysis of interrogative Slifting (e.g., *Who is a Martian, do you think?*) proposed in Haddican et al. (2014). In this analysis, the two component clauses have an indirect syntactic relation to each other, and the semantic and pragmatic relationship between the “slift” question and the main clause is conceived around the notion of evidentiality. We advance an alternative proposal whereby interrogative Slifting can be construed more on a par with *wh*-scope marking questions attested in languages like German or Hindi. Placing interrogative Slifting alongside *wh*-scope marking, a more familiar and better-studied construction type, avoids certain empirical difficulties of the original analysis and paves a way toward a uniform treatment of its syntactic, semantic and interface properties.

Keywords: Slifting; *wh*-scope marking; adjunction; interrogative; parenthetical

1 Introduction

Slifting is a name given by J.R. Ross (Ross 1973) to a putative transformational process involved in deriving sentences such as (1b) from (1a) (for challenges to this transformational view, see below):

- (1) a. I think/She said (that) Max is a Martian
b. Max is a Martian, I think/she said

According to Ross, this process involves movement of the finite embedded clause into the left periphery of the sentence, accompanied by an obligatory deletion of the complementizer. One of the arguments for the movement approach concerns island sensitivity of Slifting constructions:

- (2) *Mary is a talented singer, I heard the claim that they said
*Max is a Martian, I wonder whether they say

The questions in (3) appear to be close syntactic counterparts of the declarative sentences in (1):

- (3) a. Who is a Martian, do you think/did she say?
b. Is Max a Martian, do you think/did she say?

Each sentence in (3) contains two interrogative clauses; one is the “slift” question (a *wh*- or a yes-no question), another is the “parenthetical”, or “main” clause. Even though these sentences have an unusual “two questions in one” form, they are interpreted as a single question. More specifically, the meanings of (3a) and (3b) are close or identical to the meanings of a corresponding long-distance *wh*-question and a yes-no question, respectively:

- (4) a. Who do you think is a Martian?
 b. Did she say that Max is a Martian?

Ross (1973) treats questions like (3) similarly to the (declarative) cases of Slifting, as regards the movement analysis. At first sight, there are good reasons to do so, as these constructions, too, are sensitive to the island constraints suggesting that movement is taking place:

- (5) a. *Who is a Martian do you wonder whether she said?
 b. *What did John buy did you hear the claim that he made?

Yet, these interrogative constructions raise some non-trivial concerns. One concern is that, unlike the declarative Slifting cases, it is not obvious what their derivational source is. It should be noted that the “two questions in one” type of interrogatives itself is not at all unprecedented. There exist at least two other manifestations of this construction type known in the literature. One is the clausal pied-piping in Basque, which on the surface looks very similar to interrogative Slifting:

- (6) *Basque* (Arregi 2003)
 [Se idatzi rabela Jon-ek] pentzate su?
 [what written has Jon-erg] you-think
 ‘What do you think Jon wrote?’

Another manifestation is wh-scope marking, exemplified below for German and Hindi:

- (7) a. *German* (Fanselow & Mahajan 2000: 211)
 Was glaubst du, wen Maria gesehen hat?
 what think you whom Maria seen has
 ‘Who do you think Maria saw?’
 b. *Hindi* (Lahiri 2002: 503)
 raam kyaa soctaa hai ki ramaa kis-se baat karegii?
 Ram what thinks is that Ramaa who talk to
 ‘Who does Ram think Ramaa will talk to?’

A notable characteristic of both construction types is that, similarly to (3), their meaning roughly corresponds to that expressed by long-distance wh-dependencies (if the latter are allowed at all in a language). (8a) is a long-distance counterpart of (6) in Basque, and (8b) is a counterpart of (7a) in German (see Section 5 for further details):

- (8) a. *Basque* (Arregi 2003)
 Sei pentzate su [ti idatzi rabela Jon-ek]?
 what you-think [written has Jon]
 ‘What do you think Jon wrote?’
 b. *German* (Lutz et al. 2000)
 Wen glaubst du, daß Maria gesehen hat?
 who think you that Maria seen has
 ‘Who do you think Maria saw?’

Horvath (1997) and Lahiri (2002) mention in passing intuitive relatedness of interrogatives like (3) and wh-scope marking questions. Furthermore, Kayne (1998) suggests essentially a wh-scope marking analysis for (3), hypothesizing that these sentences might involve overt movement of the slift to the left periphery, which results in a structure abstractly reminiscent of a clausal pied-piping configuration. We return to Kayne’s suggestion in more detail in Sections 6.3 and 7.1

Haddican et al. (2014) (henceforth HHTT) propose a novel analysis of the phenomenon exemplified in (3) which they refer to as *interrogative Slifting*, a term that we also adopt for the present purposes. These authors note potential relatedness of interrogative Slifting to clausal pied-piping and wh-scope marking cases pointed out above. They further provide empirical evidence *against* clausal movement of the slift. On this basis, HHTT reject approaches to interrogative Slifting that involve clausal movement and/or pied-piping, including the wh-scope marking approach. In their own analysis, the two clauses in interrogative Slifting sentences stand in a mutually non-c-commanding syntactic relation and “communicate” with each other via notions that were previously argued to be relevant for parentheticals, such as mood and evidentiality, also supplemented by some auxiliary pragmatic principles. In some sense, the proposed analysis reinforces the parenthetical nature of the main clause, thus recalling the “juxtapositional”, or parenthetical, approach to Slifting that Ross argued against.

In this article we argue that although HHTT’s empirical arguments against clausal movement of the slift are sound, the very evidence for non-movement of the slift (we use this term theory-neutrally) is not a sufficient reason to reject the wh-scope marking approach to interrogative Slifting. We believe that the observed parallels with wh-scope marking are too robust to be treated as accidental. We also note a number of problematic issues in HHTT’s analysis. To account for interrogative Slifting, here we propose an alternative analysis in the framework of Indirect Dependency which was originally developed to account for wh-scope marking constructions. Our proposed alternative takes into account HHTT’s arguments against clausal movement of the slift, but, nevertheless, places interrogative Slifting within the set of familiar structural options provided by UG, without invoking additional notions and categories that would signal (a residue of) parenthesis in a Slifting sentence. In a way, then, we suggest a more “syntactic”, and less “parenthetical” perspective on interrogative Slifting.

In Section 2, we review HHTT’s arguments against the clausal movement approach to interrogative Slifting. In Section 3, we present the main points of their proposed analysis of interrogative Slifting. In Section 4 we note some problematic issues with HHTT’s analysis. In Section 5, we revisit the parallels between interrogative Slifting and wh-scope marking. In Section 6, we review in some detail two versions of the Indirect Dependency approach to wh-scope marking questions. In Section 7, we present and discuss our alternative proposal that views interrogative Slifting from the Indirect Dependency perspective. In Section 8, we offer further thoughts concerning a potential unification of interrogative and declarative Slifting. Section 9 is the conclusion.

2 HHTT’s arguments against the clausal movement analysis

HHTT argue against the clausal movement analysis of the interrogative slift. Their argument is based, among other things, on the following three empirical observations.

The first observation concerns the root behavior of the slift. A slifting sentence features two instances of Subject-Aux Inversion (SAI): one in the slift, another in the “main clause”. Versions without SAI are ungrammatical (see also Lahiri 2002):

- (9)
- a. *How long the talk is, do you think?
 - b. *What John bought, did she say?
 - c. *How long is the talk, you think?
 - d. *What did John buy, she said?

Arguably, if the slift comes from an embedded position, it should not display SAI. Since it does, it is likely not to have moved from an embedded position.

The second observation concerns backwards binding. Backwards binding of variables and anaphors seem to be generally unavailable in interrogative Slifting, as (10) illustrates. This is similar to declarative Slifting (see Corver & Thiersch 2001; Grimshaw 2010) and in contrast with well-known cases of wh-questions and topicalization (11). Again, this contrast is unexpected if the slift comes from an embedded position, suggesting that no clausal movement is involved.

- (10) a. *How old is his_i mother, does everyone_i think?
 b. */?Which picture of himself_i was downloaded most did he_i think?
- (11) a. Which picture of himself_i does everyone_i like best?
 b. Kiss her_i mother, every girl_i will gladly do

The third observation is that interrogative Slifting constructions seem to circumvent Condition C effects. Consider (12):

- (12) What did John_i buy did he_i say?

If Condition C holds at LF, as is commonly assumed, then the absence of Condition C effects is unexpected if the slift comes from a position c-commanded by *he*. This suggests that the slift does not obligatorily reconstruct. Again, this militates against a classical clausal movement analysis.

We agree with HHTT in that the above arguments mark as problematic any analysis that involves movement of the slift from the embedded position, without making additional and non-trivial stipulations. But HHTT actually make a stronger claim, rejecting on this basis the clausal pied-piping as well as wh-scope marking approaches to interrogative Slifting. In support of this claim, they discuss three empirical differences between interrogative Slifting and wh-scope marking. One noted difference is that the slift is a root clause showing typical root properties such as SAI (see above). In contrast, the embedded clause in a wh-scope marking language is not a root clause, as seen, for example, in the absence of V2 in German typical for embedded clauses. The relevant example (7a) is repeated here:

- (7) *German*
 a. Was glaubst du, wen Maria gesehen hat?
 what think you whom Maria seen has
 ‘Who do you think Maria saw?’

The second, related, difference concerns non-embeddability of interrogative Slifting under the usual embedding contexts (viz. predicates like *wonder* and *ask*), which may or may not correlate with obligatory Subject-Aux inversion in the main clause; see (13). This contrasts with wh-scope marking questions that can easily be embedded (14):

- (13) *I wonder how long do you think the talk is

- (14) *German* (Beck and Berman 2000)
 Ich weiss nicht was er denkt welches Buch sie gelesen hat.
 I know not what he thinks which book she read has
 ‘I don’t know which book he thinks she read.’

The third difference lies in the tendency of the subject in the main clause to be the second person in the interrogative Slifting case, but not in the wh-scope marking sentences, as exemplified below (we return to this in Section 7.3.3):

- (15) (cf. Lahiri 2002: 506)
 Who did John see, ??does Bill/do you believe?

- (16) *German*
 Was glaubt Karl mit wem Maria gesprochen hat?
 what thinks Karl with whom Maria spoken has
 ‘Who does Karl think that Maria has spoken to?’

Despite these apparent differences, we consider rejecting the *wh*-scope marking approach in this context a premature step. We focus here only on the relevant virtues of this approach, although we also suspect that to the extent that that *wh*-scope marking and clausal pied-piping share common syntactic properties, the clausal pied-piping analysis, too, may be reconciled with the Slifting facts presented here (cf. also Horvath 1997; Heck 2008). We revisit the three differences noted above toward the end of Section 7 and make suggestions as to what factors might be responsible for those, under our alternative analysis of interrogative Slifting. In the next section, we review HHTT’s original analysis.

3 HHTT’s analysis

The main points of HHTT’s analysis can be broadly summarized as follows.

1. Since both clauses display root properties (SAI), they express two questions, only one of which is salient in the discourse. A pragmatic principle termed Main Information Request decides which is salient.
2. Syntactically, each clause is headed by a Force head, encoding its illocutionary potential as an interrogative (cf. Rizzi 1997, among others).
3. The relationship between the slift and the main clause is conceived around the notion of Evidentiality. In particular, the main clause expresses the source of information and relationship of the speaker to the information expressed, typical for parentheticals (cf. Rooryck 2001)
4. Syntactically, the slift originates in the Complement of MoodEvid head, and the main clause is its Specifier. Crucially, there are never *c*-command relations between the elements in the Specifier and the Complement, which explains phenomena such as the absence of backwards binding and bleeding Condition C effects.
5. A null operator coindexed with the slift is generated in the complement position of the main clause predicate, and undergoes *wh*-like-movement to left periphery of the matrix clause.
6. The slift undergoes Focus movement to Spec-FocusP, the position from which interpretation takes place. This movement does not change (the absence of) command relations between the elements of the two clauses.

The analysis is illustrated in Figure 1 which represents the derivation of (17) (SpAct stands for the Speech Act category):

- (17) How old is she, did she say?

The main advantage of the analysis proposed in HHTT is that it captures the “non-movement” phenomena discussed in the previous section. The absence of command relations between elements of the two clauses at any derivational point ensures the observed absence of backward binding and bleeding Condition C effects. Additionally, introduction of ForceP captures the root properties of each participating clause, and the postulated Focus movement is intended to account for the observed intonational patterns of interrogative Slifting, specifically, an intonational downstep in the main clause.

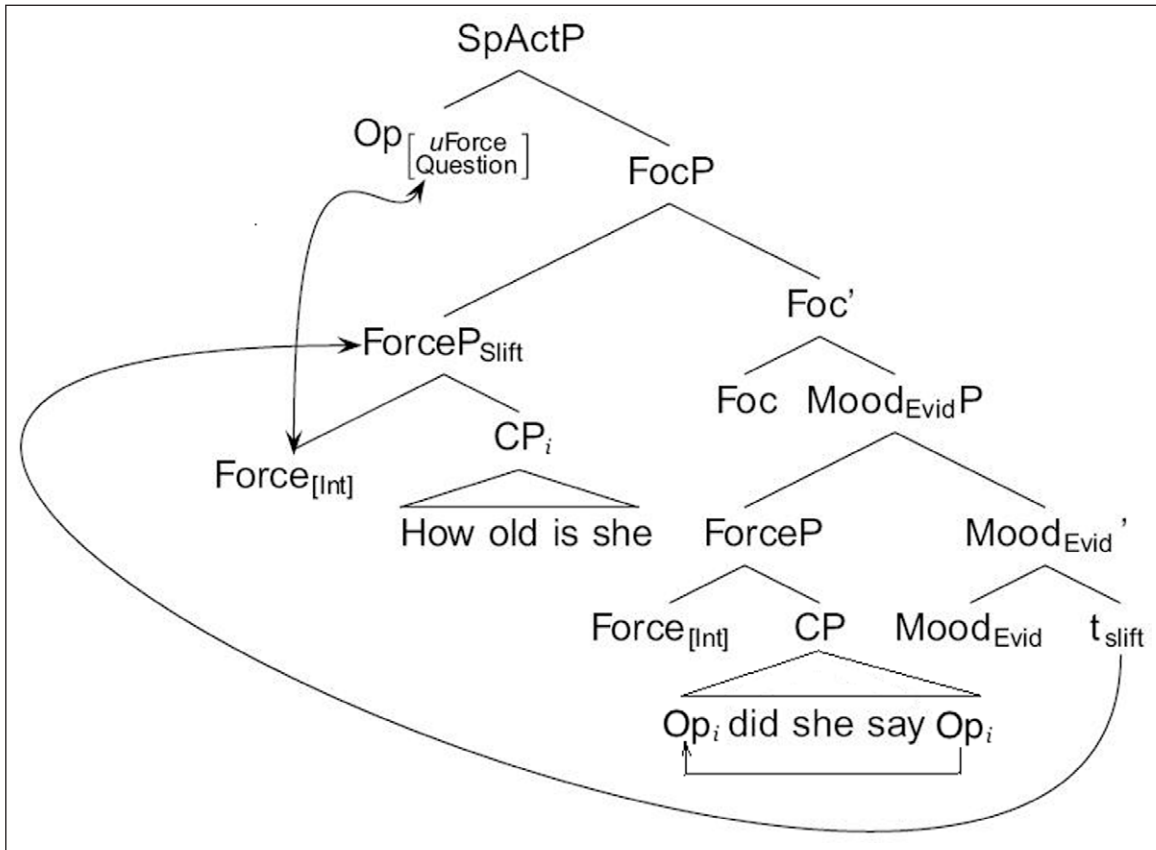


Figure 1: HHTT’s analysis of interrogative Slifting (adapted from their (96) with minor adjustments).

4 Some problematic points of HHTT’s analysis

Our main worry with respect to HHTT’s analysis is that it entails a rather loose structural relation between the slift and the main clause. As Figure 1 illustrates, the only syntactic association between the clauses consists in coindexation of the slift with an operator in the main clause (see 5. above), on analogy with some approaches to quotative structures (Collins & Branigan 1997; Suñer 2000). However, the nature of the proposed operator remains uncertain, and its syntactic and semantic properties are therefore difficult to formalize. This approach also misses a generalization and leads to some empirical difficulties. In what follows we spell out our concerns in more detail.

1. The semantic relationship between the two ForcePs in the postulated structure seems rather arbitrary. In particular, a correlation in semantic types of the corresponding clausal components is not foreseen. Based on Rooryck’s (2001) claim that (declarative) parenthetical clauses such as *I think* express evidential meanings, on a par with speaker-oriented evidential adverbs such as *evidentially, obviously* etc., the authors extend this claim to interrogative Slifting and treat the main clause as a source of evidentiality. However, one would expect that if interrogative main clauses express evidentiality then so should their declarative, or non-SAI, counterparts, essentially as in Rooryck’s original proposal. This predicts that all four combinations of the two kinds of CPs (embedded in the respective ForcePs) should be possible in syntax:
 - (18) a. John likes Mary, I think
 - b. Who does John like, do you think?

- c. *John likes Mary, do you think(?)¹
- d. *Who does John like, you think?

The first two examples are correctly predicted as resulting from a combination of two ForcePs with a matching semantic type (as well as an illocutionary specification): proposition in (18a) and question in (18b).² Examples (18c) and (18d), however, are combinations of ForcePs with non-matching semantic types, and are ungrammatical. The ungrammaticality of examples such as (18d) with an intended meaning similar to (18b) has already been noted by Ross (1973: fn21). It is not clear how these examples can be ruled out by the analysis schematized in Figure 1, which entails no direct syntactic or selectional constraints on their co-occurrence. Thus the model overgenerates. The ungrammatical status of (18c) and (18d) also demonstrates that treating interrogative main clauses as evidential markers on a par with their declarative counterparts is not sufficient to account for Slifting.

This is not to suggest that evidentiality plays no role in interrogative Slifting constructions. It does, just like it does in the corresponding long-distance *wh*-questions where matrix clauses like *do you believe* express the speaker's attitude towards the embedded clausal complement. But capitalizing on that alone helps neither in elucidating the details of the syntactic structure of interrogative (and declarative) Slifting, nor determine the source of the main similarities and differences with the other constructions types.

The comparison of the grammatical and ungrammatical options in (18) highlights the restrictions on the combinatorial possibilities of combining clauses of similar and different semantic types in a single utterance. We believe that, in an explanatory account, these restrictions should be stated at the syntax-semantics interface. Specifically, a combination of two clauses of the semantic type question (viz “two questions in one”) can indeed be semantically interpreted as a single question, but in a very limited set of configurations, including clausal piped piping (cf. (6)) or *wh*-scope marking (cf. (7)) whose syntax and semantics are by now quite well understood (see Dayal 1996; Lutz et al. 2000; Stepanov 2000; Lahiri 2002; among others). On the other hand, a combination of a (non-interrogative) proposition and question can in principle be understood as a) an indirect question embedded under a [+Q] selecting predicate, as part of the matrix proposition (cf. *I wonder what John bought*), or b) a long-distance question where a matrix proposition such as *do you think* is embedded under the matrix, [-Q] selecting, predicate (cf. *What do you think John bought?*). The syntactic structure illustrated in Figure 1 overlooks these restrictions, and therefore seems to us an unlikely candidate for describing the grammatical options including interrogative Slifting.

2. A key component of HHTT's analysis is the postulated pragmatic principle “Main Information Request” (MIR) identifying the slift as the interpretational core of the entire construction. For the authors, the principle is needed to rule out unwanted derivations (one may, for instance, envision a hypotheti-

¹ An anonymous reviewer correctly points out that negated versions of the matrix clause may be acceptable, cf. *This is nice, don't you think?* This raises an interesting question concerning the role of negation in the evidentiality contexts interacting with interrogation, which we put aside for the present purposes.

² HHTT note a number of distributional differences between the declarative and interrogative Slifting. In a structure as in Figure 1, these differences need to be encoded with additional provisos, the nature of which remains rather uncertain (though the authors offer some suggestive remarks towards the end of their study). See also Section 8.

cal alternative interpretation of (17) as a yes-no question). The authors hint that MIR may “at least indirectly” correlate with movement of the slift to the Focus position (see Haddican et al. 2014: 102). However, the actual mechanism of this correlation is not made explicit. Clarifying this point is crucial for understanding how the pragmatic and the semantic components of grammar interact in this particular construction (a common view in the literature is that the semantics feeds the pragmatics, rather than the other way around). Furthermore, a priori MIR seems like a conceptual complication in this analysis, especially in light of considering the intuitively similar construction type, long-distance *wh*-questions, the standard analysis of which does not need a resort to such a principle (see also the next point).

3. In our view, the analysis downplays intuitively felt interpretational similarities between interrogative Slifting cases and corresponding long-distance *wh*-questions mentioned in Section 1 (cf. (3) vs. (4)). The analysis raises a question whether the syntactic structure of long-distance *wh*-questions should be re-conceptualized around the notions that are central to the proposed analysis of interrogative Slifting, namely, evidentiality, mood and MIR. It is not obvious at present whether such re-conceptualization can be reasonably justified or even necessary.
4. Following Collins & Branigan (1997) and Suñer (2000), the authors take the slift to be “anaphorically linked” to a null operator, *Op*, merged as a complement of *say* in (17) and later undergoing movement to the left periphery of the matrix clause. It is this movement to the left periphery that gives rise to island effects (cf. (5)). We see two potentially problematic issues here. First, the empirical nature of *Op* remains obscure: it only seems to serve the purpose of satisfying the selectional requirements of *say*. The motivation for the movement of *Op* is also not obvious. Second, it is not quite clear what role *Op* plays for the purposes of semantic interpretation.³

We argue, instead, that there is a tighter semantic relationship between the two clauses in interrogative Slifting, that resembles one in the *wh*-scope marking structure. In preparation for this argument, in the following section we review a number of empirical parallels between Slifting and *wh*-scope marking questions that will be relevant for our alternative proposal.

5 Empirical parallels between interrogative Slifting and *wh*-scope marking

In this section, we outline a number of distributional similarities between interrogative Slifting and *wh*-scope marking. These similarities come out either as accidental or require non-trivial additions to HHTT’s analysis in order to be incorporated. Since English does not have a productive *wh*-scope marking strategy, the basis for parallels with Slifting is necessarily cross-linguistic and therefore indirect; yet we believe that it establishes reasonable grounds for arguing for a similar derivational history of the two construction types. We use German and Hindi to illustrate the properties from the *wh*-scope marking side (see also Reis 2000 for related discussion of Slifting and so called integrated parentheticals whose properties resemble Slifting in German).

³ A reviewer suggests that the selectional relation between *Op* and the slift could perhaps be made tighter in a hypothetical scenario whereby *Op* moves to a position from where it c-commands the slift (contrary to what is assumed in HHTT), after which the slift undergoes QR at LF toward *Op*. This scenario would then be abstractly reminiscent to version 2 the *wh*-scope marking-based alternative that we propose in Section 7. This could probably work, but needs independent empirical and conceptual motivation. It should also be noted that we do not argue against operators in interrogative Slifting constructions in general. Our proposed analogue of *Op*, a null *wh*-scope marker, is well motivated in other languages that feature the *wh*-scope marking strategy. See also Grimshaw (2010), Kluck & de Vries (2015) and Griffiths (2015) for alternative treatments of (declarative) Slifting constructions making use of operators.

5.1 Selectional restrictions

Similarly to wh-scope marking, the slifted question can be associated only with a set of verbs in the “main”, or “parenthetical”, clause that usually select non-interrogative [-Q] finite *that*-complements such as *think* or *believe*. Verbs that select interrogative [+Q] complements such as *ask* and *wonder* are generally disallowed.

- (19) *How long is the talk do you wonder?
*What did John buy, did she ask?
- (20) *German* (Beck and Berman 2000)
*Was fragst du, mit wem Maria gesprochen hat?
What asks you with whom Maria talked has
*‘With whom do you ask that Maria has talked’

In wh-scope marking, this restriction appears a priori the reverse of what is expected, given that the selecting verb is followed by an interrogative clause. Interrogative slifting mirrors this restriction. Similarly, as HHTT point out, both wh-scope marking and interrogative Slifting are disallowed with factive and manner of speaking verbs.

5.2 No restrictions on interrogative types

Both yes/no questions and (root) wh-questions can participate in interrogative Slifting (cf. (3)); the latter can involve any kind of wh-phrase; multiple wh-phrases can also participate cf. (21). All of that is generally true in the wh-scope marking languages as well:⁴

- (21) Who bought what, did he say?
- (22) *Russian* (Stepanov 2000)
Kak vy sčitaete, prišel li Ivan?
how you believe came Q Ivan
‘Do you think Ivan came?’
- (23) Kak vy sčitaete, kto čto kupil?
how you believe who what bought
‘Who do you believe bought what?’

5.3 Negation

Negative “main clauses” are generally precluded in interrogative Slifting, just as they are in wh-scope marking:

- (24) a. *How long is the talk, don’t you think?
b. *What did John buy, didn’t she say?
- (25) *German*
*Was glaubst du nicht, wen Maria gesehen hat?
what think you not whom Maria seen has
‘Who don’t you think Maria saw?’

5.4 Presuppositions

Compare the German wh-scope marking and long-distance questions in (26):

- (26) a. Was glaubt der Georg, wen die Rosa geküsst hat?
what believe the Georg who the Rosa kissed has
‘Who does Georg believe that Rosa kissed?’

⁴ Concerning yes-no questions, one exception among the wh-scope marking language is German, which does not allow such question in the “contentful” part of a wh-scope marking construction (see the articles in Lutz et al. 2000 for discussion).

- b. Wen glaubt der Georg, dass die Rosa geküsst hat?
 who believes the Georg that the Rosa kissed has
 ‘Who does Georg believe that Rosa kissed?’

According to Herburger (1994), Georg is understood to believe that Rosa kissed someone in both the long-distance question (26b) and the *wh*-scope marking question (26a), but Rosa’s actual kissing someone is presupposed only in the *wh*-scope marking example. In other words, in (26a), but not in (26b), the proposition that Rosa kissed someone must be interpreted as part of the speaker’s beliefs. In contrast, the embedded proposition in (26b) can be interpreted as a figment of Georg’s imagination, that is, *de dicto*.

There exists a similar restriction on the slift in interrogative Slifting cases (also noted by HHTT). In (27b), the slift carries a presupposition that someone will volunteer, which is in conflict with the presupposition triggered by *know*. Hence the sentence is pragmatically odd. In contrast, a corresponding long-distance question (27a), where no such presupposition is carried, is felicitous.

- (27) a. I know no one will volunteer to help, but [who does Mary think will volunteer?]
 b. #I know no one will volunteer to help, but [who will volunteer, does Mary think?]

Thus interrogative Slifting patterns with *wh*-scope marking with respect to (obligatory) presuppositions in the slift.

5.5 Comparatives

Reis (2000) (see also McCawley 1970 and Postal 1974 for earlier discussions), observes that sentences like German (28) have a non-contradictory and contradictory reading depending on whether the source of believing is the subject or the speaker:

- (28) Sie glaubt, daß Fox hier populärer ist als er ist
 she believes that Fox here more-popular is than he is
 ‘She believes that, here, Fox is more popular than he is’

A correspondent long-distance *wh*-question preserves both non-contradictory and contradictory readings (29a). In contrast, interrogation in the form of *wh*-scope marking leaves only the contradictory reading (29b).

- (29) a. Wo glaubt sie, daß Fox populärer ist als er ist?
 where believe she, that Fox more-popular is, than he is
 ‘Where does she believe that Fox is more popular than he is?’
 b. Was glaubt sie, wo Fox populärer ist als er ist?
 what believe she, where Fox more-popular is than he is
 ‘Where does she believe that Fox is more popular than he is?’

In this respect, interrogative Slifting in English behaves similarly: only an inconsistent reading is retained in (31b), whereas a long-distance *wh*-question has both (31a):

- (30) She believes that, in this region, Fox is more popular than he is
 (31) a. Where does she believe that Fox is more popular than he is?
 b. #Where is Fox more popular than he is, does she believe?

The above are some of the common properties shared by the interrogative Slifting and *wh*-scope marking sentences. An explanatory account of interrogative Slifting should take these into consideration.

6 Back to *wh*-scope marking

Consider again the *wh*-scope marking examples in (7), repeated here:

- (7) a. *German*
 Was glaubst du, wen Maria gesehen hat?
 what think you whom Maria seen has
 ‘Who do you think Maria saw?’
- b. *Hindi*
 raam kyaa soctaa hai ki ramaa kis-se baat karegii?
 Ram what thinks is that Ramaa who talk to
 ‘Who does Ram think Ramaa will talk to?’

There exist two major approaches to these constructions. The first approach, termed Direct Dependency, maintains that the *what* in (7) is a dummy *wh*-expletive associated with the second *wh*-phrase, essentially a marker of its LF scope (hence the name). In that capacity, it may be generated in its surface position. This approach will not be directly relevant for our purposes (but see, e.g. the articles in Lutz et al. 2000 and Schippers 2012 for comparative evaluations of the two approaches). The second approach, Indirect Dependency, views the *wh*-scope marker not as a dummy *wh*-expletive, as in Direct Dependency analyses, but as a fully fledged contentful *wh*-element that originates in the argument position of a selecting verb (and may be fronted if a language has overt *wh*-movement). Each clause in a *wh*-scope marking question such as (7) represents a local *wh*-dependency. The semantic part of Indirect Dependency is based on the semantics of questions developed in Hamblin (1973). In Hamblin’s semantics, the denotation of a question is a set of its propositional answers. A *wh*-expression in this approach is interpreted as an existential quantifier. There exist two major formal implementations of Indirect Dependency in the literature that we refer to as version 1 and version 2, following the terminology in Lahiri (2002). Below we briefly review the syntactic and semantic aspects of each of these implementations.

6.1 Indirect Dependency: Version 1

Version 1 is an original implementation of Indirect Dependency developed in Dayal (1996) and represented in Figure 2 below as the Logical Form of the Hindi example (7b).

The syntactic component of this model is quite simple: each of the component questions basically constitutes a separate interrogative CP with a local *wh*-dependency. These CPs are joined as sisters into a root CP which itself formalizes the “two-question in one” intuition.

Semantically, the question *who will Ramaa talk to* provides a restriction on the *wh*-scope marker *kyaa*, an existential quantifier. This (covert) restriction is encoded in the form of the variable *T* contained in the meaning of *kyaa* whose type is $\langle \langle \langle s, t \rangle, t \rangle, t \rangle$, that is, a set of questions. The denotation of *kyaa* is given in (32):

$$(32) \quad ||kyaa|| = \lambda Q \exists q [T_1(q) \ \& \ Q(q)], \text{ where } T_1 \text{ is associated with } CP_1 \text{ by coindexation (cf. Figure 2).}$$

Given that, the interpretation of the matrix clause (paraphrased as ‘*What Raam thinks*’) proceeds as follows. The trace of *kyaa* is a variable of the type $\langle s, t \rangle$ and the IP denotes an open sentence (with the unbound propositional variable *q*). The node converting the proposition in this IP into a set of propositions (that is, a question) is taken to be C^0 : it introduces a variable *p* which denotes a function from propositions to propositions. Applying this function to the denotation of IP yields a proposition denoted by $p = \hat{think}(r, q)$.

Version 2 is thus slightly more elegant than version 1 as it involves less technical machinery to encode the restriction on the *wh*-scope marker (namely, there is no need for T and the accompanying ad hoc procedures like predicate abstraction; see also Heim & Kratzer 1998: 98). It is also arguably more compositional than version 1 in that it does not require free abstracting over variables such as Dayal's T or *p*, an *ad hoc* procedure that is, strictly speaking, unjustified on the grounds of syntax and transparent Logical Form (see above). Version 2 implies no direct complementation structure between the matrix and “embedded” questions whatsoever. Version 1 in principle allows for this possibility but not forcing it (see also Section 7.2). Empirically, the two versions have approximately the same coverage. However, Lahiri (2002) argues that the two versions can be distinguished in their treatment of bound variables in examples like the following (his (113)):

(33) *Hindi* (Lahiri 2002)

Har aadmii_i kyaa soctaa hai, ki us-ko_i kahaaN jaanaa hai
 every man what thinks that he where go has
 ‘What does every man think, where does he have to go?’

Example (33) has a bound variable reading whereby *us-ko* “he” is bound by the quantifier *har aadmii* “every man”. Lahiri argues that version 1 has much greater difficulty deriving the bound variable reading than version 2 (see this work for details). Thus version 2 may actually be preferable for the analysis of *wh*-scope marking questions (see also Stepanov 2000 and Stepanov & Stateva 2006 for further arguments). At the same time, anticipating the discussion in Section 7, there are reasons to think that version 1 of the *wh*-scope marking analysis is actually a better alternative in the case of interrogative Slifting constructions, on empirical grounds.

6.3 Kayne's suggestion

Kayne speculates that in cases like (34), “[...] the embedded verb would have as its argument the phrase [Op *where*], with that phrase moving to a *-wh* Spec,CP, followed by movement of Op (a maximal projection) to the higher *+wh* Spec,CP (followed by preposing of the entire embedded CP)” (Kayne 1998: fn. 107). Schematically, this amounts to the derivational steps in (35):

(34) Where did he go, do you think?

- (35)
- | | | |
|----|--|-------------------------------------|
| a. | you think [_{CP} he went [Op _j <i>where</i>] _i] _m | base-generation |
| b. | you think [_{CP} [Op _j <i>where</i>] _i he went t _i] _m | intermediate <i>wh</i> -movement |
| c. | Op _j you think [_{CP} [t _j <i>where</i>] _i he went t _i] _m | Op movement to matrix <i>+wh</i> CP |
| d. | [_{CP} [t _j <i>where</i>] _i he went t _i] _m Op _j you think t _m | preposing of embedded CP |

This analysis is close in spirit to the Direct Dependency approach to *wh*-scope marking. Recall that this approach treats a *wh*-scope marker as a semantically empty element associated with the contentful *wh*-phrase. In contrast, the Indirect Dependency analysis associates the *wh*-scope marker with the entire embedded clause. Indeed, Kayne refers to the empty operator as a “counterpart of *what*”. Generating Op together with *where* is what makes this analysis reminiscent of the Direct Dependency approach.

As it stands, however, Kayne's suggested line of analysis is difficult to justify empirically, especially as concerns association of the empty operator with the contentful *wh*-phrase (though see Hagstrom 1998 and Cable 2010 for similar proposals for constructions unrelated to Slifting). The syntactic relation of the moved Op and the moved slift remains

unclear, as are the landing sites of both movements. But the most problematic aspect of this analysis is the last derivational step in (35d), movement of the slift, in light of the empirical evidence against the movement analysis discussed in Section 2 (recall that the relevant evidence includes the root behavior of the slift, the absence of backward binding and circumventing condition C effects).

This problematic step, however, can be avoided if we adopt Kayne’s suggestion with an important adjustment. We believe that the silent operator *Op* should be associated not with a contentful *wh*-phrase, as in Direct Dependency, but, rather with the entire clause that contains that *wh*-phrase, from the very beginning, as in Indirect Dependency. This opens a possibility for an alternative treatment of Slifting in the context of the Indirect Dependency approach as outlined in Sections 6.1 and 6.2. Let us explore this possibility in more detail.

7 Interrogative Slifting as Indirect Dependency

7.1 The proposal

In the spirit of Kayne’s suggestion regarding a phonetically empty *wh*-scope marker in Slifting constructions, we propose that a silent *wh*-scope marker *WHAT* is generated in the complement position of the propositional attitude verb like *think*. Previously, we argued that introducing a silent *wh*-scope marker in English yields a substantial mileage in explaining important properties of long-distance *wh*-movement such as its successive cyclic character, the choice of embedding verb and some others (Stepanov & Stateva 2006). Here we suggest that interrogative Slifting, too, can be beneficially subsumed under a version of the Indirect Dependency analysis. Our proposal is compatible with both versions of Indirect Dependency considered in Section 6. Under version 1 (see Section 6.1), the structure of interrogative Slifting basically mirrors the “two-CP” structure in Figure 2, except that the order of the contentful interrogative clauses is reversed. For now, we schematically represent the structure of (3a) as in Figure 4 (we will revise this structure later).

If this structure is assumed, the silent *wh*-scope marker *WHAT* has the same lexical entry as *kyaa* in (32). We have thus:

(36) (cf. (32))
 $||\text{WHAT}|| = \lambda Q \exists q [T_1(q) \ \& \ Q(q)]$, where T_1 is associated with CP_1 by coindexation.

The derivation proceeds largely as outlined in Section 6.1. The denotation of CP_1 can then be either a *wh*-question *Who is a Martian* as in (3a) or a yes/no question such as *Is Max a Martian* in (3b). If the former, the denotation of the slift CP_1 is something like $\lambda p' \exists x [p' = \hat{is_a_Martian}(x)]$. If the latter, then denotation of slift is something like $\lambda p' [p' = \hat{Max\ is\ a\ Martian\ or\ p} = \hat{Max\ is\ not\ a\ Martian}]$. This is in line with Hamblin’s (1973) intuition that yes-no questions are a set of two propositions related by negation. The denotation of the root *CP* is derived by applying the function denoted by CP_2 to the denotation of the slift.

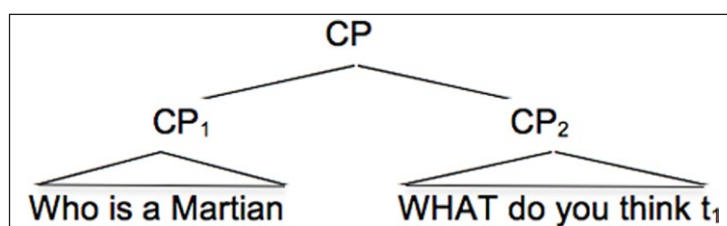


Figure 4: The LF structure of example (3a) under version 1 of Indirect Dependency.

Note that the structure illustrated in Figure 2 is in some respects reminiscent of HHTT’s original structure (cf. Figure 1). In both version 1 of Indirect Dependency that we utilize here, as well as in HHTT’s structure, a) there are no command relations between the two CPs, and b) the slift is associated with the operator in the main clause anaphorically (although in our proposal, it is the topic variable *T* that enters this association, not the entire operator as in HHTT’s analysis). However, this is only a superficial resemblance. In fact, not just ours, but *any* kind of structure conforming to these criteria will look similar to that original structure, since the criteria themselves are just too broad and span all kinds of non-complementation structures. This is why our alternative proposal is not simply substituting the labels, but suggests a *kind* of structure very different from that proposed by HHTT. The locus of this difference lies, above all, in the semantics of the relevant operator *WHAT*. In our view, understanding the nature of the operator is crucial. Under Hamblin’s framework for the semantics of questions, the lexical entry in (36) yields a *wh*-scope marking analysis automatically, and thus offers a very different overall perspective on interrogative Slifting compared to that offered by HHTT.

Under version 2 of Indirect Dependency, the silent scope marker forms a constituent with the fronted slift at LF which gets interpreted along the lines of the same compositional semantics as *wh*-scope marking questions. The interpretable LF of (3a) is then roughly the one in Figure 5.

As in *wh*-scope marking, the slift (either a *wh*-question or a yes/no question, see above) serves as a restrictive clause on the *wh*-scope marker, along the lines of reasoning argued for in Section 6. *WHAT* undergoes *wh*-movement to the left periphery. Its lexical entry is then as in (37):

$$(37) \quad ||\text{WHAT}|| = \lambda P \lambda Q \lambda p \exists q [P(q) \ \& \ Q(q)(p)], \text{ where } P \text{ is the restrictor clause positioned as its syntactic sister.}$$

The *wh*-scope marker’s denotation is applied to the denotation of CP_1 . The resulting value is, in turn, applied to a function *Q* of type $\langle st, \langle st, t \rangle \rangle$ whose denotation results from merging a binder for the trace of the moved *WHAT*. The result of using functional application is a question. In our case here, *P* is the interrogative Slift attached to *WHAT* after movement of the latter (see Section 7.3), and the function *Q* is the denotation of the CP node *do you think*. One of the propositional arguments of *Q* is provided by the propositional variable *p* resulting from the overt movement of *WHAT*, and the second propositional argument *q* is provided by the denotation of the IP within the slift CP_1 . The rest of the derivation proceeds as in Section 6.2.

Under version 2, the derivational history of the slift needs to be further clarified. In order to do that, let us for the moment go back to *wh*-scope marking. The literature

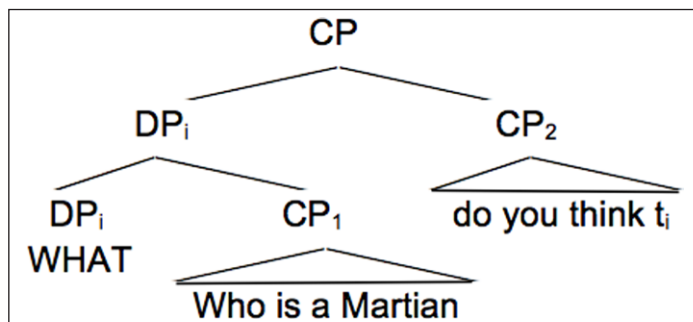


Figure 5: The LF structure of example (3a) under version 2 of Indirect Dependency.

on Indirect Dependency entails several theoretical possibilities with regard to how the LF in Figure 3 might be derived. One commonly entertained option is that the *wh*-scope marker and the restrictor clause form a constituent already at D-structure, that is, at the position of complement of *think* (Herburger 1994; Fanselow and Mahajan 2000; Stepanov 2000; Lahiri 2002; among others). In languages like Hindi where finite complements appear on the right of the verb (despite the canonical SOV word order; see (7b) above), the restrictor clause might get extraposed and right-adjoined to the main clause IP at S-structure. This also meshes well with the common observation that finite complements in Hindi are structural adjuncts (Dayal 1996). At LF, the extraposed interrogative CP can reconstruct back to the position of the syntactic sister of the *wh*-scope marker (e.g. *kyaa*), where it gets semantically interpreted via raising the entire constituent, along the line of the analysis in Figure 3 (an alternative implementation would be to make use of different syntactic copies of the extraposed CP). Note, however, that if we apply this reasoning to interrogative Slifting cases, it would imply that the slift (which in our case serves as a restriction on WHAT) originates in the complement position of *think*. If this is so, then our alternative analysis under version 2 would be susceptible to HHTT's arguments against the movement analysis in Section 2. At the face value, this would seem like a good enough reason to abandon version 2 of Indirect Dependency as a potential candidate for a theory of interrogative Slifting at this point and opt for version 1. Yet, it turns out that the current set of theoretical tools in minimalist syntax provides a potential remedy that may reconcile the *wh*-scope marking analysis under version 2 with HHTT's facts. The remedy lies in a particular timing of derivational operations provided by the minimalist bare phrase structure.

7.2 Late merger of the Slift under version 2

Consider again the absence of Condition C effects in the Slifting, exemplified in (12) repeated here as (38):

(38) What did John_i buy did he_i say?

This effect is reminiscent of the “anti-reconstruction” facts concerning the absence of Condition C in relative clauses in contrast to noun complement clauses. This contrast is by now well-known in the syntactic literature (van Riemsdijk & Williams 1981; Freidin 1986; Lebeaux 1988; 1991; Stepanov 2001a; Takahashi & Hulsev 2009; among others):

- (39) a. *?Which argument that John_i is a genius did he_i believe?
 b. Which argument that John_i made did he_i believe?

In (39a), the clause containing the R-expression is a complement, and the sentence is degraded. In (39b), the relative clause containing the R-expression is an adjunct, and the sentence is grammatical. Assuming that Condition C holds at LF (as well as at other levels; see also fn.6), this implies that a Condition C violation is somehow circumvented. In his influential account of this contrast, Lebeaux (1988) proposes that adjuncts can be added to the structure acyclically (in terms of the Government and Binding framework, because they are not required by the Projection Principle and therefore have an option of not being merged at D-structure). More specifically, the relative clause in (39a) can be adjoined to the *wh*-phrase *after* the latter has overtly moved to Spec-CP. Since it is adjoined later, the R-expression contained in the relative clause is never in the scope of the *c*-commanding pronoun, hence condition C is circumvented. In contrast, arguments are required to be inserted cyclically, hence there is a derivational point when the R-expression in the

noun-complement structure in (39b) is under the scope of the c-commanding pronoun, resulting in a condition C violation.^{5,6}

Applied to the Slifting case, the absence of Condition C effects in (38) follow straightforwardly, if we assume that the slift is an adjunct to the wh-scope marker. This is again well in line with the majority of Indirect Dependency analyses proposed in the literature where the wh-scope marker is a DP to which the restrictor clause is attached (see above). We suggest then that the Slift may enter the structure acyclically, after the wh-movement of WHAT, so it is never in a position c-commanded by the elements in the matrix clause.

Consider now HHTT's backward binding facts again, repeated here:

- (40) a. *How old is his_i mother, does everyone_i think?
 b. */?Which picture of himself_i was downloaded most did he_i think?

These facts militate for an even stronger version of the late merger hypothesis for the Slift. It seems that not only can the slift enter the structure postcyclically, it *must* do so, to avoid a cyclic derivation where the variable or anaphor is in the scope of the quantifier or R-expression, respectively. This stronger version of the Late Adjunction hypothesis was independently argued for in Ishii (1997) and Stepanov (2001a; b). Stepanov also shows that the corresponding derivational algorithm follows naturally from bare phrase structure and the No Tampering principle (Chomsky 1995; 2000); in fact it is expected as a null hypothesis in contrast to the weaker version that allows, but not necessitates, acyclic merger. For many cases of late merger discussed in the literature, the two versions are empirically indistinguishable, but the phenomena discussed in Ishii's and Stepanov's work and the Slifting case above are compatible only under this stronger version (see also Ochi 1999).

7.3 Fine-tuning the resulting structure(s)

Under the proposed modification of the Indirect Dependency analysis, the structural similarities between wh-scope marking and interrogative Slifting discussed in Section 5 are naturally expected. The differences between the two types of constructions can now also be tracked fairly straightforwardly. One difference is in the morpho-lexical makeup of the wh-scope marker: it is overt in the case of wh-scope marking, whereas it is phonetically null in the case of interrogative Slifting. Another difference, noted in the beginning of Section 7.1, is that the surface (viz. before Spell-Out) constituent ordering of the slift and the main clause in the interrogative Slifting construction is the opposite of the ordering of the "main question" and the clause in which the wh-scope marker originates, in a wh-scope marking question. Under version 1 of Indirect Dependency, the second difference can be accounted for by introducing some asymmetry into the mode

⁵ A closer scrutiny of Lebeaux's paradigm revealed that some relevant noun-complement sentence counterparts of (39a) may be more acceptable than others, to the extent of being on a par with their relative clause counterparts (Lasnik 1999). It is at present not quite clear what additional factors (perhaps of a non-syntactic nature) may come into play. This does not present a particular concern for us here, since the above dichotomy is not the only source of evidence for the late merger of adjuncts (see Stepanov 2001; Takahashi & Hulsey 2006).

⁶ An alternative account that has the same empirical consequences but does not necessarily imply acyclic Merger of adjuncts assumes that Condition C is a condition that holds exclusively at the LF interface (Chomsky 1995, among others). Thus at the point when the R-expression in the adjunct is c-commanded, there is trivially no Condition C violation. For reasons of space, we will not go into discussing the comparative merits of both kinds of accounts here (but see, e.g. Lebeaux 2009); for our present purposes, either kind of approach may be employed.

of concatenation of the two CPs (cf. Figure 4); specifically, the “main clause” CP needs to be a right adjunct in interrogative Slifting (see Section 7.3.2 for more details concerning this possibility), but a left adjunct in *wh*-scope marking. Note that the linear order of the two CPs is immaterial for compositional interpretation at LF under this version. Under version 2, the difference reduces to the level of representation at which the complex constituent consisting of the *wh*-scope marker and the slift is displaced into the left periphery for interpretation: in the case of *wh*-scope marking, it is LF (see Figure 3), in the case of interrogative Slifting, it is likely to be overt syntax (see Figure 5). In minimalist terms, it is natural to encode this distinction in terms of some version of “strong feature”, or the EPP property (e.g. Chomsky 1995; 2008) on the hosting functional head such as C. Thus C in an interrogative Slifting construction has a strong feature triggering movement to CP in overt syntax, whereas C in a *wh*-scope marking construction has a “weak” relevant feature (viz. lacking the EPP-property) which does not trigger phrasal movement before Spell-Out.

Note that both differences, the morpholexical makeup of the *wh*-scope marker and the “strength” of the movement-triggering feature under version 2, can in principle be reduced to the respective differences in the lexicon. This is a welcome result as it sits well in line with the commonly accepted desideratum for reducing the number of specific construction types in UG (for reasons of learnability, simplicity etc.) to a restricted (sub)set of universal principles coupled with language-specific options, with the latter reduced to the differences in the lexicon, arguably the only source of cross-linguistic variation. At the same time, the core syntactic component is shared by both types of constructions.

In addition, interpretational similarities and differences between interrogative Slifting and long-distance *wh*-questions are accounted for by extension: in languages that have both *wh*-scope marking and long-distance *wh*-questions, their similar (though not identical) meaning is well documented and accounted for (Lutz et al. 2000). In English, which does not productively utilize the *wh*-scope marking strategy, Slifting is its closest approximation, so one would expect that its linguistic behavior should approximate and/or differ from that with long-distance questions in more or less the same areas *wh*-scope marking questions do (in languages that have those). This seems to us to be the case. In particular, meaning-wise, interrogative Slifting and long-distance *wh*-questions are very close. One important difference is presuppositional, discussed in Section 5.6. That the slift carries an actuality presupposition which the corresponding long-distance *wh*-question does not carry (cf. (27)), is naturally expected if the slift is akin to a *wh*-scope marking structure. Stepanov & Stateva (2006) provide a semantic account of the presuppositional difference between *wh*-scope marking and long-distance *wh*-question (cf. (26)). That account utilizes the idea that the presupposition regarding the “embedded” clause in the *wh*-scope marking question (cf. (26a)) projects from the local level to the matrix CP level, but this is not possible in the long-distance question (26b) because the embedded clause in that question contains a trace of a moved *wh*-phrase, the semantic translation of which is a variable not bound within its own clause. That is, there are no presupposition conditions on defining that variable. This account naturally applies to the Slifting case as well, because the Slift is a syntactically autonomous clause that does not contain open variables, hence a presupposition can in principle project further.

We still need to address several remaining issues concerning interrogative Slifting, some of which are pointed out in the end of Section 2, in light of the proposed Indirect

Dependency analysis.⁷ We turn to that in the following subsections, where we also fine-tune the two proposed Indirect Dependency structures and show how some of the properties of interrogative (and non-interrogative) Slifting might help us choose among them.

7.3.1 Root properties

Recall from Section 2 that the relevant root properties of interrogative Slifting include a) its non-embeddability (cf. (13)), which apparently sets it apart from the known cases of *wh*-scope marking, and b) SAI in the slift. Concerning the root-clause status of the Slifting sentences, we can keep HHTT's solution which is compatible with our proposed alternative analysis. In the spirit of the earlier work on root clause properties (Hooper & Thompson 1973; Emonds 1976; Chomsky 1995; Zanuttini & Portner 2003; Heycock 2006, among others for discussion), HHTT suggest to relate the root character of Slifting to the pragmatic, more specifically, illocutionary properties which project into syntax in the form of a Force head in the left periphery of the clause. The idea behind the Force operator is closely related to Cheng's (1991) clausal typing hypothesis as well as the Force feature in the left periphery architecture of Rizzi (1997). Following HHTT, we assume that a Force head takes a CP as a complement projecting a Force phrase.⁸ The [interrogative] value of Force triggers SAI in the slift, possibly by a syntactically feature-valuation mechanism involving an uninterpretable *uForce* feature, as explicated by HHTT.⁹ This means that, in our proposed structures under versions 1 and 2 shown in Figures 4 and 5, we substitute the CP nodes with the corresponding ForceP nodes, to capture the root properties of both interrogative clauses in a Slifting question.

⁷ A reviewer points out an additional contrast between interrogative Slifting and *wh*-scope marking in that main clause material must be defocused in the former (as also noted in HHTT's study), but does not have to be in the latter, as illustrated by the contrast in (i)

- (i) a. (HHTT's ex. (65))
How old is she, did you/*YOU say/*SAY
- b. German (adapted from Reis 2000: 375)
Was glaubst DU wohin er gegangen ist?
what believe you where-to-he gone is
»What do you believe that he went?«

Although the observations in (i) are correct, the putative contrast is actually not so clear cut because of the cross-linguistic basis of the comparison. The focusing strategies (and the restrictions on those) may operate differently in different languages being sensitive to factors such as linear position, structural position and overall informational contour (see, e.g., Kiss 1998), independently of the *wh*-scope marking analysis. For instance, in sentences involving integrated parentheticals in German (cf. Reis 2000) closely resembling interrogative Slifting in English, there seems to be a contrast between focusing *du* in the end of the clause and in the middle, as (ii) shows. A similar contrast seems to hold in English, for instance if tested on an adapted version of HHTT's (82), as in (iii):

- (ii) a. Wie alt ist sie, glaubst du/?*DU?
how old is she think you
- b. Wie alt glaubst du/DU ist sie?
how old think you is she
- (iii) a. *When will the children come, do YOU think?
b. (?)When do YOU think will the children come?

We leave clarification of mechanisms of (de)focusing in interrogative Slifting under our proposed analysis for further work.

⁸ It is actually not crucial for our analysis whether Force is projected as a separate functional head in the slift, as in HHTT's analysis, or is simply an (additional) feature within the interrogative C-domain. We remain neutral among the two possibilities.

⁹ As correctly noted by a reviewer, this implementation still needs some additional proviso(s) to ensure the absence of SAI in the subject *wh*-questions (cf. *Who left* vs. **Who did leave?*; cf. also Pesetsky & Torrego 2001).

7.3.2 Main clause float: Another parenthetical residue

As originally noted by Ross (1973), the main clause can appear in various positions in the slifting sentence, without any significant consequences for interpretation. The following example from HHTT (adapted from their (93)) illustrates this for declarative Slifting:

- (41) The children (she said) will (she said) come back (she said) in two days time (she said)

According to HHTT, interrogative Slifting is more restricted in this regard: the main clause may only appear following the slifted clause or to the right of the *wh*-phrase (their (82)):

- (42) When on earth (do you think) will (??do you think) the children (??do you think) come back (do you think)?

Despite the postulated restrictions, HHTT only mark the other potential placements with ??, not full star, as far as acceptability is concerned. However, intermediate placements may in fact be allowed depending on the utterance, as illustrated, for instance, in the following example provided by an anonymous reviewer:

- (43) What did John buy, did she say, in the store around the corner yesterday?

In our view, the set of possible attachments of the main clause in interrogative Slifting may actually approximate that in declarative Slifting, if not exactly coincide with it. Constraints that seem to preclude certain placements may not be syntactic in nature, but deal with factors like prosody (see below). For the sake of keeping the focus, we will not explore this issue here in detail, but we depart from HHTT in that we acknowledge a greater set of attachment sites. For the present purposes, we keep the (simplifying) assumption that there are no significant syntactic differences between declarative and interrogative Slifting with respect to these attachment sites.

An important question that arises in this regard is how these multiple versions of interrogative Slifting can be accounted for. HHTT provide a potential explanation only for the sentence-final position and the position right after the *wh*-phrase. HHTT account for these restrictions by postulating an additional Focus head in the left periphery. This Focus head can attract a corresponding feature in the slift triggering phrasal movement to its Spec in case the attracting feature has an EPP/specifier-projecting property. The two orders then result from the choice to pied-pipe either the *wh*-phrase alone, or the entire slift, to Spec-FocusP. Intermediate placements as in (43) are problematic for HHTT's account, because deriving those would imply far non-trivial movement possibilities such as raising non-constituents (see that work for details).

Can our proposed Indirect Dependency account do better? We believe it can, if certain structural properties of the main clause are taken seriously. Informal references to the main clause as “parenthetical” in the literature underscore its secondary, or subsidiary role in the interpretation of the Slifting sentence, in contrast to the slift. The “defocused” intonational pattern of the main clause noted by HHTT reinforces this observation. Phrases that have these properties usually have a structural status of *adjuncts* in the syntactic tree. Indeed, parenthetical clauses as those used in declarative Slifting are often treated as adjuncts in the literature (e.g. Corver & Thierch 2001). In addition, it is commonly assumed that adjuncts in the sense of modifiers are always licensed semantically by having at least one unsaturated element. Such structures can be integrated into a larger structure by coindexation with some element in the larger structure. For instance, a specifier of a relative clause (a classical example of a clausal adjunct) denoting an unsaturated position can be coindexed with the head of the larger structure to which it attaches (e.g. NP) or with another element by predication.

If we look at the structure of the wh-scope marking sentence under version 1 in Figure 2 we will see that exactly this kind of situation is in place. The main clause (interpreted as $\lambda p \exists q [T_i(q) \ \& \ [p = \hat{think}'(j, q)]]$) contains an open slot for T which is saturated by coindexation with the «embedded» question (see the discussion in Section 6.1 for details). It is therefore reasonable to regard the main clause in Figure 2 as an adjunct. In fact, this conclusion may even be forced upon us by the architecture of the phrase structural component of minimalist syntax. Consider again the near-root segment of the structure in Figure 2 or its interrogative Slifting counterpart in Figure 4, shown in Figure 6.

The structure in Figure 6 is symmetric in the sense that both sisters are CPs. Such symmetric structures do not sit well with bare phrase structure (see, e.g. Haider 2013 for recent discussion). One reason why such structures may be problematic has to do with labeling (Chomsky 2008). Roughly speaking, syntactic objects created by operation Merge are labeled after the lexical item corresponding to the appropriate projecting head. In symmetric structures, there are two such projecting heads, hence the label of the resulting phrase cannot be unambiguously defined (see also Citko 2011 for some potentially welcome cases of non-labeling that do not include the constructions discussed here). Another reason has to do with linearizing syntactic structures. Kayne’s (1994) Linear Correspondence Axiom, an algorithm of translating syntactic c-command relations into precedence relations on terminals, entails that terminals that symmetrically c-command each other cannot be properly linearized. Basically, a pair of terminals $\langle \alpha, \alpha \rangle$ cannot be linearized because such algorithm yields a contradictory statement that α precedes itself. The same idea is explored in slightly different forms in Moro (2000) and Richards (2010). These considerations suggest that the structure in Figure 6 has to be made asymmetric, to ensure the correct labeling and linearization at the syntax-phonology interface. Having one of the CPs as an adjunct is a natural solution in this regard.

Suppose, then, that the main clause in both the wh-scope marking structure under version 1, and, more importantly, its interrogative Slifting counterpart, is an adjunct, more precisely, a right adjunct in interrogative Slifting and a left adjunct in wh-scope marking. We thus arrive at a structure as in Figure 7 (incorporating the ForceP component; see the discussion above).

How does this help solve the multiple attachment site problem? For this, we need a second component to the argument that we are constructing. Hoffman (1996) and Stepanov (2001a) observe that in configurations as in Figure 7 with αP adjoined to (root) node βP , seen in light of the Linear Correspondence Axiom or a similar algorithm, no linear order

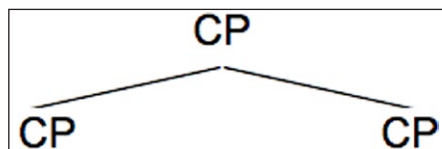


Figure 6: The near-root segment of the wh-scope marking structure illustrated in Figure 2.

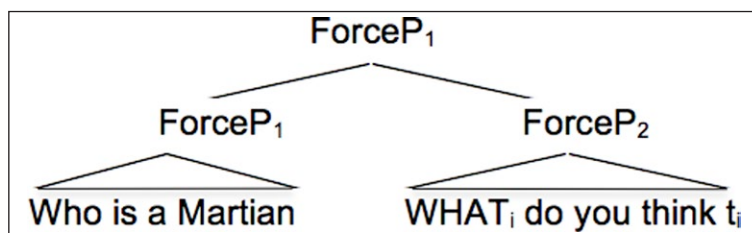


Figure 7: The modified structure of interrogative Slifting under version 1.

can be assigned between the elements of α P and β P. This is because the adjunct does not asymmetrically c-command into the structure to which it is adjoined, nor the latter asymmetrically c-commands into the adjunct (see Kayne 1994 and the above works for formalizations of this idea). Hoffman further proposes the following (Hoffman 1996: 104):

- (44)
- a. If α and β do not enter an asymmetric c-command relation, they are sent to PF unordered.
 - b. An element α of tree T may appear anywhere in T provided that it does not violate ordering constraints and that it does not violate adjacency constraints.
 - c. Elements α and β must be adjacent if they enter into a strong feature-checking relation.

Hoffman reasons that because α P is attached to β P, it must appear at the syntax-phonology (PF) interface as part of β P. But because no asymmetric c-command relation obtains, the adjunct can appear *anywhere* inside β P, as long as this does not violate certain adjacency restrictions. The latter, presumably, can be construed as an interface effect of checking a strong feature in syntax. For instance, the English *often* can appear in almost all available syntactic positions in the tree. In the case of English, adjacency requirements resulting from feature checking prohibit placing *often* between the verb and the object, while in the case of French *souvent*, the placement is prohibited between the subject and the verb. This derives a well-known “verb-raising” asymmetry between the two languages:

- (45)
- a. (often) John (often) has (often) kissed (*often) Mary (often)
 - b. (souvent) Jean (*souvent) a (souvent) embrassé (souvent) Marie (souvent)

Hoffman assumes that adverbs like *often* in both languages are base generated high, and the other orders are derived by a non-syntactic operation of a-scrambling (see also Laenzlinger 1993). Although the presentation does not make it fully precise, one may imagine an operation like a-scrambling to be part of the syntax-phonology (PF) interface, motivated by interface considerations like prosody. This kind of approach utilizes the idea that the linear ordering does not have to be (fully) determined by syntax: some portions of it can be regulated by different mechanisms. We refer the reader to the above work for details concerning possible constraints on a-scrambling and other related matters.

Regardless of whether Hoffman’s approach to adverbs is on the right track, the idea that, in the absence of explicit linear ordering instructions from the interface, adjuncts are allowed to surface in different positions within the phrase to which they are adjoined, is worth merit in the context of interrogative (and perhaps, also declarative) Slifting. An account that suggests itself at this point is the following. The adjunction structure in Figure 7 enforces no particular ordering between the elements of ForceP₁ and ForceP₂ (importantly, the ordering *within* each of these phrases can be established by the usual means). Because of that, the adjunct phrase ForceP₂ is allowed to appear anywhere inside ForceP₁, as long as this does not violate interface requirements, viz. adjacency. For instance, the main clause cannot appear between the verb and the object, possibly for the same or similar reasons that the adverbs in English cannot, namely, because of a feature-checking relationship between these two elements. Other words are then in principle allowed, including intermediate placements that were a problem for HHTT’s account.

Of course, this is only the beginning of a solution. A more articulated theory of multiple attachments of the main clause should, first, provide a more solid empirical basis for the claim that all or almost all such attachments are possible that seems to be available at the moment, and, second, investigate in detail potential syntactic and/or interface constraints that restrict the distribution of the main clauses in the Slifting constructions.

The same considerations do not easily carry over to version 2 of the Indirect Dependency account (see Section 6.2). In version 2, it is not trivial to construe the main clause as an adjunct to the slift, as the two do not form a constituent at all. Rather, the slift forms a constituent with the silent *wh*-scope marker *WHAT* which itself is part of the main clause structure. The structure of version 2 is thus more rigid and cannot easily accommodate the multiple attachments of the main clause, except for the canonical, sentence-final one (Of course, version 2 is not problematic for the standard *wh*-scope marking structure where the sentence-final placement is the only one). So far we have not chosen among the two versions of our Indirect Dependency account of Slifting, because our main task was to demonstrate Indirect Dependency as a viable alternative in general. But if the sketch of a solution to the multiple attachment problem is on the right track, this could potentially provide us with independent evidence for choosing version 1 of the Indirect Dependency analysis over version 2, as a sound candidate for an explanatory theory of interrogative Slifting. In turn, the rigidity of version 2 could be construed as additional evidence that this version of the analysis is the right one for *wh*-scope marking questions, which, again, do not allow for such great flexibility of ordering among their component clauses.

7.3.3 *Person restrictions*

Yet another relevant issue concerns HHTT's reported person restrictions on the subject in the main clause, whereby using first and third person subjects leads to greater ungrammaticality than using second-person subjects. This is exemplified in example (15) repeated here for convenience:

(15) Who did John see, ??does Bill/do you believe?

According to the authors, *wh*-scope marking questions do not seem to require this sort of discourse support in using first and third person subjects (cf. (16)). HHTT regard these restrictions as a manifestation of evidentiality in Slifting sentences ultimately encoding that into a syntactic head *MoodEvid* which takes the main clause as its specifier and the slift as a complement.

It should, however, be noted that the distinction between interrogative Slifting and *wh*-scope marking in terms of person restrictions is not quite clear cut. As the authors themselves note, these restrictions can be weakened or even lifted under certain discourse conditions, for instance in contexts where it is presupposed that a first or third person experiencer has beliefs about the slifted question. At the same time, certain *wh*-scope marking languages, e.g. Russian, have a tendency toward using second person subjects in these questions (Stepanov 2000).

Taking this caveat into account, within our alternative proposal, we can attribute the respective person restrictions to the root status of the slifted *ForceP*, specifically, to the [interrogative] value of the root feature of the *Force* head in the slift (cf. Section 7.3.1; thanks also to an anonymous reviewer for a helpful suggestion at this point). Informally, the idea is that "asking" entailed in the slift is addressee-directed by their nature. A preference for a second person would therefore not be surprising. Note that this suggestion is compatible with the general Indirect Dependency approach to interrogative Slifting, because the semantics of *wh*-scope marking, and the corresponding part of the semantics of interrogative Slifting, are computed at a lower structural level, that of CP (see the discussion above). In other words, the proposed structural parallel with *wh*-scope marking extends "up to CP", but not further. The higher nodes at the left periphery, including *ForceP*, might well be responsible for additional pragmatic effects observed in the Slifting constructions.

In a larger perspective, we tend to view these person restrictions as a suggestive evidence for recognizing an intrinsic homogeneity between interrogative Slifting and “integrated parentheticals” in the sense of Reis (2000). An example of an integrated *was*-parentheticals in German is given in (46) (cf. (7)):

- (46) a. Was glaubst du, wen hat Maria gesehen?
 what think you whom has Maria seen
 ‘Who do you think Maria saw?’

Similarly to interrogative Slifting and *wh*-scope marking, this is another typical representative of “two questions in one” (see Section 1). The main empirical difference between (46) and a corresponding *wh*-scope marking construction lies in the root status of the “main” question, evident from the V-second effect in the “main question” part that usually shows up in root clauses in German. Reis (2000) reports virtually the same person restrictions in cases like (46) as HHTT do for interrogative Slifting (see above), in contrast to classical *wh*-scope marking. Viewing interrogative Slifting sentences in the context of integrated parentheticals does not contradict our main proposal, however. As Reis (2000) and Dayal (2000) note, there seems to be a tight structural continuum between integrated parentheticals and *wh*-scope marking. While the two constructions share a number of common features (e.g. a set of licensed matrix verbs, prohibition on negative verbs in the *was*-clause), they also differ in a number of respects, including the above mentioned person restrictions, as well as hierarchical relations between the clausal constituents, the use of modal particles etc. (see Reis 2000 for details). Since there are no independent explanations for the common features of the two constructions, it is likely that those are non-accidental. Reis (2000) offers empirical evidence for assuming a historical relationship between the two construction types, arguing for a kind of diachronic syntactic reanalysis that connects one to the other (e.g. some of that evidence involves the diachronic distribution of the scope marker *was*). Thus, the person restrictions in interrogative Slifting can be seen as evidence for common feature(s) that it shares with integrated *was*-parentheticals, itself “close relatives” to *wh*-scope marking. Furthermore, the strength of the tendency to use second person subjects may be seen as a diagnostic test to establish how “close” the respective construction is to the integrated parenthetical source. This applies to both interrogative Slifting as well as *wh*-scope marking, again in line with our unification approach. In other words, if the value of the root feature of the Force head is the right encoding mechanism yielding the relevant person restrictions, as suggested above, then this feature value might potentially also serve as an indication of this “closeness”. In particular, the Force head in both integrated parentheticals and interrogative Slifting questions would bear the positive [interrogative] value, whereas in *wh*-scope marking questions it would not bear this value.

Dayal (2000) further argues that *wh*-scope marking may be a grammaticalization of a paratactic conjunction of two independent questions, in a way that the two interrogative constituents assume a more hierarchical relation with respect to one another (by establishing the proper command relations), than in simple parataxis. Specific mechanisms of this structural inter-connectedness are at present not well understood. We leave a detailed comparison of structural properties of integrated *was*-parentheticals and interrogative Slifting for a future study.

7.3.4 Summary

Our proposed structures for interrogative Slifting under version 1 and version 2 of Indirect Dependency share a number of properties with HHTT’s analysis. Aside from capturing the root properties of the slift and the main clause in similar ways, both structures position

the two main parts of a slifting sentence in a non-commanding relation, consistent with the finding that the slift does not have an embedded status, as well as with their relative phonological properties (e.g. distinct intonational contour on the main clause, referred to in HHTT's work as a "defocusing" pattern). Our alternative analysis also entails a number of important differences and simplifications. The main aspect in which our analysis differs from HHTT's is a type of syntactic structure that we suggest, namely, the structure of a *wh*-scope marking question in the sense of Indirect Dependency. As noted above, the main conceptual benefit of our analysis is that it reduces interrogative Slifting to a well-documented construction type whose syntactic and semantic properties are by now quite well understood. Our analysis can straightforwardly explain a number of distributional similarities between the two construction types noted in Section 5, but also opens a door for investigations of further interesting properties of interrogative Slifting that may follow from its origin in a *wh*-scope marking structure.

Our alternative analysis also does not need to resort to pragmatic principles such as MIR (cf. Section 2) whose conceptual motivation in the interrogative Slifting constructions does not seem straightforward. MIR is not needed in our analysis because there is no need to choose among the two component parts of the question to bear the «main» interrogative role. This is so because in our analysis, the Slifting questions are not two independent pragmatically-anchored questions, but is always a single, unified question. Its compositional interpretation as a set of propositions follows from the way the two clausal parts are combined, given that the operator connecting the two clauses (what HHTT considered a quotative-like operator) is a *wh*-scope marker.

An additional advantage of our analysis is that, by establishing a structural parallel between interrogative Slifting and *wh*-scope marking, it predicts that the semantics of interrogative Slifting should be similar to the semantics of long-distance questions. This move is empirically justified, since, as noted above, an answer to a *wh*-scope marking question is indeed reminiscent of or identical to an answer to a long-distance *wh*-question (see Section 1). This (near-) identity was the basis for exploring corresponding structural similarities between the two question types (see Lutz et al. 2000; Stepanov & Stateva 2006; Haida 2007). At the same time, an answer to an interrogative Slifting question is very similar to an answer to a *wh*-scope marking question (see, e.g. Section 1). By exploring the structural similarity between interrogative Slifting and *wh*-scope marking, our analysis implies (by transitivity) a structural parallel between interrogative Slifting and long-distance *wh*-questions. In contrast, HHTT's analysis tends to obscure this inherent empirical parallel, as it is difficult to see, from the structure they propose, how an answer to an interrogative Slifting question may be related to that to a long-distance *wh*-question.

As we have seen, the Indirect Dependency approach supplanted by the existing tools of minimalist bare phrase structure are sufficient to keep the non-movement analysis of the slift endorsed by HHTT, but at the same time avoid the cost of postulating an entirely new structure.

There is suggestive independent evidence for choosing version 1 of the Indirect Dependency analysis over version 2. One piece of this evidence bears on the multiple attachment sites of the main clause in interrogative Slifting constructions. We have seen that version 1 is flexible enough to accommodate multiple attachments of the main clause, while version 2 is not. Interestingly, some additional data also seem to point in the same direction. As discussed in Section 6.2, Lahiri (2002) argues that version 2 straightforwardly accounts for *wh*-scope marking constructions involving a bound variable reading (cf. (33)), while it is difficult or impossible to do so under version 1. Thus version 2 thus may be preferable over version 1 on explanatory grounds. But this reasoning concerns only *wh*-scope marking.

As we saw in Section 2, there is no bound variable reading in interrogative Slifting. This constitutes an important empirical difference between the two construction types (in addition to those discussed in section 7.3). If so, then, we would actually prefer a structure that excludes a possibility for the bound variable reading, in order to avoid overgeneration. Version 1 conforms to this requirement nicely, while version 2 is dispreferred on these grounds. Thus it seems possible to account for this difference properly within the general Indirect Dependency approach, without invoking additional mechanisms.

8 Towards unification of interrogative and non-interrogative Slifting

It is at present not completely clear whether the two types of Slifting should be unified under one structural umbrella. A priori, there do not seem to be reasons against doing that, and Ross' (1973) classical work treated both types as part of the same phenomenon. HHTT report a number of similarities between the two Slifting types, but they also note a number of distributional differences. In brief, declarative Slifting cases seem to be less restrictive in terms of the person feature of the main clause subject (not restricted to second person), have a very similar, yet non-overlapping set of main clause verbs, and allow focusing the subject in the main clause (contrary to interrogative Slifting cases). HHTT also claim that interrogative Slifting cases allow much lesser freedom in attachment sites for the main clause than declarative Slifting sentences, but as we saw in Section 7.3.2, there are reasons to doubt this particular claim. The other empirical differences clearly delineate the distribution of the two types of Slifting. What is not clear at present is whether these differences are sufficient to warrant a separate syntactic analysis for declarative Slifting. While we will not attempt to decide this issue one way or another in this work, we would like nevertheless to explore a hypothetical possibility for unification of declarative and interrogative Slifting.

So far we have argued that our analysis is conceptually more appealing over HHTT's, because it places interrogative Slifting alongside the more familiar and better-understood construction type, namely, *wh*-scope marking. It also has an empirical advantage as it captures a number of distributional similarities between interrogative Slifting and *wh*-scope marking in a natural way, whereas this is not the case in HHTT's analysis. But we also believe it has a good potential for unifying the two types of Slifting.

In order to be able to pinpoint possible structural parallels between interrogative and declarative Slifting under our proposed syntactic and semantic account, we should take the postulated deep homogeneity of interrogative Slifting and *wh*-scope marking one step further. Ideally, one may want to seek a common structural denominator unifying both types of Slifting via its connection to the structure that underlies *wh*-scope marking.

A number of authors working on Hindi, Hungarian, and Russian, all *wh*-scope marking languages, observe that the *wh*-scope marker in these languages has a declarative counterpart (Bayer 1996; Dayal 1996; Horvath 1997; Fanselow and Mahajan 2000; Stepanov 2000). It takes the form of a pronominal correlative that usually bears no semantic contribution to the overall meaning, but serves as a kind of expletive placeholder for the embedded finite complement, as illustrated in (47):¹⁰

- (47) *Hindi* (Mahajan 2000, ex. (7))
 sitaa-ne **yeh** (abhii) socaa ki ravii-ne tumhe dekhaa
 Sita-erg it just.now thought that Ravi-erg you saw
 'Sita thought (just now) that Ravi saw you'

¹⁰ Note that this is different from the English *it* as in *I regret it that you came* where *it* correlates with a presuppositional load of the factive verb, and thus is not a semantically empty element. See also below.

The declarative correlative is in complementary distribution with a *wh*-scope marker, but, similarly to the latter, is necessarily associated with the meaning of the finite clause, providing a kind of functional pointer to it from the point of view of language use. Early proposals in the philosophical literature attributed this association to a deictic use of the correlative; for instance, even for English, Davidson (1969) and LePore and Loewer (1989) considered the (paratactic) source of an utterance like *Galileo said that the earth is round* to be two clauses *Galileo said that. The earth is round*. LePore and Loewer (1989) further develop a semantic analysis of this paratactic structure that capitalize on the syntactic non-relatedness of the first and the second clauses.

Bayer (1996) and Dayal (1996) argue that finite *ki*-clauses in some Indo-Aryan languages including Hindi are not verbal complements, but adjuncts, attached at a high syntactic position, e.g. CP. This is very reminiscent of the “paratactic” structure in the sense of the lack of direct complementation. This is also reminiscent of the structure of *wh*-scope marking questions under version 1 (see Section 6.1). In particular, under version 1 of that analysis (see Section 6.1), the *ki*-clause may simply adjoin to the main CP meaning *Sita thought it*, and the correlative *yeh* remains in the main clause and may refer to that CP via a similar mechanism of coindexation. Under version 2, *yeh* forms a constituent with the *ki*-clause at LF, and perhaps, even at D-structure (the S-structure representation being derived by extraposing the *ki*-clause; see the above works for discussion). In that case, *yeh* does not even need its indexical component. Its lexical entry would simply be:

$$(48) \quad ||yeh|| = \lambda p.p$$

That is, the correlative takes a proposition as its argument, and returns the same proposition.

Let us then assume for the moment that a similar structural homogeneity holds in the case of Slifting. Suppose, further, that there is a declarative counterpart of the *wh*-scope marker WHAT (see Sections 6.3 and 7.1), which we refer to as IT. Postulating this silent pronominal is in line with the more general hypothesis concerning the structure of finite complementation known as the universal “DP-shell” hypothesis. This hypothesis, which goes back to early syntactic work, maintains that at least certain kinds of finite clauses are NPs or DPs (Chomsky 1973; Kiparsky & Kiparsky 1973). The DP-shell hypothesis was further developed in various forms in Torrego & Uriagereka (1993; 2002), Müller & Sternefeld (1995), Stepanov (2001b) and Stepanov & Stateva (2006). The latter three works suggested that *all* finite clauses may be DPs headed by a correlative. One potential implementation of this approach involves an expletive-like pronominal associated with the dependent clause, e.g. by coindexation (as in *It_i is surprising [that John left]_i*). Note that our postulated silent correlative IT is qualitatively different from the complementizer *that* or its null counterpart, as well as from the overt pronoun *it*. The DP-shell hypothesis in the sense of this association was later shown to be empirically valid for Indo-European languages including English, German, Spanish, Russian, and possibly old English. In some of these languages the correlative is overt, in others silent, and yet in others both versions are available (see the above literature for more discussion).

Declarative Slifting is, of course, not a proper finite complementation structure, but approximates it to a great extent, at least with the choice of propositional attitude selecting verbs. It is therefore reasonable to conjecture that a similar kind of association holds between the main verb and the slift, namely, that mediated via a silent pronominal. If the same syntactic skeleton underlies interrogative Slifting and declarative Slifting, and, furthermore, as we argued above, that this skeleton is based on the structure of Indirect

Dependency, one can imagine, for instance, that the structure of (1a), repeated here, could then be as in (49):

- (1) a. Max is a Martian, I think
 (49) $[_{CP1} [_{CP1} \text{Max is a Martian}]_i [_{CP2} \text{I think IT}]_i]$

This analysis is reminiscent of version 1 of the Indirect Dependency structure and implies that the correlative and the finite clause do not form a constituent, but may co-refer via a mechanism of coindexation (see the case of *yeh* above). Note that this analysis is slightly different from the Bayer-Dayal type analysis of Hindi finite complementation sentences like (47): whereas for these authors, finite dependents are adjuncts, in our proposed structure (49) it is the main clause that is an adjunct (similarly to interrogative Slifting cases). This departure reflects the non-identity of finite complementation structures and declarative Slifting, a desirable result. Yet, because of the common structural skeleton, structure (49) implies that both types of Slifting are essentially the same syntactic phenomenon, which conforms to speakers' intuitions as well as the empirical observations starting with Ross' (1973) original work. In particular, (49) allows for flexible placements of the main clause based on the absence of asymmetric c-command, similarly to cases of interrogative Slifting, along the lines of Hoffman (1996) (see Section 7.3.2).

A possible derivation of (1a) that mirrors version 2 of the Indirect Dependency analysis could proceed along the lines of (50):

- (50) a. $[_{CP2} \text{I think } [_{DP} \text{IT}]]$ \rightarrow *movement of IT*
 b. $[_{CP2} [_{DP} \text{IT}] \text{I think } t]$ \rightarrow *late merger of the Slift (Section 7.2)*
 c. $[_{CP2} [_{DP} [_{DP} \text{IT } [_{CP1} \text{Max is a Martian}]]] \text{I think } t]$

This derivation ensures that the slift is not a direct complement of the main verb, as it should be. There are various ways in which an interpretative mechanism of the structure in (50c) could be envisioned. One possibility is interpretation via a mechanism similar to that used in conjunctions (see LePore and Loewer 1989 for pursuing a version of this idea). Yet, this derivation is somewhat more controversial than the previous one. It is not clear what motivates overt movement of the silent IT (there is no obvious analogue of wh-movement, as in the case of WHAT). In addition, multiple attachments of the main clause *I think* may also be problematic for this account. Thus an account under version 1 of Indirect Dependency might be a better option here as well.

Of course, an account along these lines is yet incomplete as it does not take into account certain fine-grained properties that distinguish declarative and interrogative Slifting, discussed in HHTT and mentioned in the beginning of this section (e.g. obligatory defocusing the main clause in interrogative Slifting, but not declarative Slifting, the non-overlapping set of verbs participating in each type of Slifting). Distributional properties of the postulated silent correlative should also be further clarified. Nevertheless, we feel that such an account goes some way towards explaining the distribution of both types of Slifting, and opens a potential new venue for unifying them under one theoretical model.

9 Conclusion

Slifting has for a long time remained a somewhat marginal phenomenon in the syntactic and semantic literature because it involves a parenthetical or parenthetical-like component. There is currently a steadily growing amount of literature on declarative Slifting (see, e.g. Emonds 1976; McCawley 1982; Potts 2002; Dehé & Kavalova 2007; Kluck & de Vries 2015 for some classic and more recent work), but much less focus is devoted on interrogative Slifting. One important issue is how much of the core syntax is involved in

each case, and to what extent it interacts with information-structural properties and discourse anchoring. HHTT is a sound attempt to tease apart the syntactic and parenthetical (paratactic) aspects of interrogative Slifting. Its main empirical value is in establishing a number of important syntactic properties of this construction, and also in pointing out empirical similarities and differences with other construction types including wh-scope marking. Indeed, our proposed alternative approach shares many aspects of that original analysis. But the analysis in HHTT also entails a rather loose and mediated relationship between the slift and the main clause, and in this, we believe, it retains a residue of the “parenthetical” structure. The view adopted in the present work is that interrogative Slifting is even more “syntactic” than previously thought. Its structure falls among the set of syntactic options provided by UG and is reminiscent of wh-scope marking understood in the sense of Indirect Dependency. This allows a better understanding of the purely syntactic aspects of interrogative Slifting as well as a clearer articulation of the interface aspects of its Logical Form. The proposed analysis naturally explains a number of abstract similarities between interrogative Slifting and wh-scope marking. In addition, it offers a potential way of unifying the interrogative and non-interrogative Slifting, which remained a difficult task in HHTT’s account.

We expect that an extension of our analysis to interrogative Slifting-like phenomena in other languages may yield interesting results. One such phenomenon involves “integrated parentheticals” discussed in Section 7.3.3, a construction type with *prima facie* strikingly similar properties. Many cases of clausal pied-piping may possibly be subsumed under this analysis as well.

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Competing Interests

The authors declare that they have no competing interests.

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