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Woods, Rebecca

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The syntax of orientation shifting

Evidence from English high adverbs

Rebecca Woods

This paper reviews new data supporting the inclusion of a Speech Act Phrase in the left periphery. Illocutionary and evidential adverbs in English shift orientation from speakers in declarative sentences to addressees in yes-no interrogative sentences. This orientation shift falls out of independently motivated principles: the adverbs contain a logophorically-sensitive PRO subject which is controlled by a syntactic representation of the discourse participants contained in a Speech Act Phrase high in the CP layer. It will be suggested that clause type modulates which discourse participants are available; only speakers are available in declaratives whereas addressees are also available in interrogatives.

1. Introduction

It has previously been noted that some ‘high’ adverbs in the sense of Cinque (1999) shift orientation in questions compared with declarative sentences. The orientation of an adverb refers to the individual whose attitudes, opinions or knowledge the adverb expresses. The individuals in question here are the discourse participants, that is the speaker and the addressee involved in the speech act. Illocutionary and evidential adverbs orient to the speaker of the sentence in declarative sentences but in questions orient to the addressee. However, the syntax and semantics of this phenomenon have not yet been fully analysed despite its consistency and systematicity.

This paper has two aims: first, to show empirically the contexts in which adverbs shift orientation. Second, to analyse how this shift occurs using independently motivated principles. It will be proposed that discourse participants are syntactically represented in a covert speech act verb phrase above matrix CP, and that the high adverb has a logophorically-sensitive PRO subject which is controlled by the appropriate discourse participant.¹

¹It should not be taken at this point that the analysis of discourse participants as presented here accounts for the licensing of first- and second-person features, as Speas and Tenny (2003) try to do; if this were a claim, then it would fail at the first hurdle because there would be no licensor for second-person indexicals in declarative sentences, which is clearly not the case. I leave the question of how the representation of discourse participants

The paper is structured as follows: section 2 outlines previous work on adverb orientation and orientation shifting and section 3 presents the key data. Section 4 presents a syntactic analysis of the phenomenon, with further detail on the syntax and semantics of speech acts in section 5. Section 6 will bring together my conclusions with directions for further research.

2. Previous research

Two areas of research will be outlined in this section: firstly, work concerning the orientation of adverbs. This will include a brief overview of work on grammaticalised elements such as evidentiality markers which also shift in interrogatives. Secondly, key research on the representation of discourse participants in syntax will provide context for the analysis to follow.

Jackendoff (1972) first argued that adverbs are a part of speech in their own right rather than the product of a transformation rule applied to nominals. He identified three types of adverb based primarily on the surface syntactic position of these adverbs in sentences, but also based on their orientation. Jackendoff defines speaker orientation as “as relating the speaker’s attitude toward the event expressed by the sentence” (1972:56), illustrating his point using a variety of paraphrases (examples in (1) from Jackendoff 1972:56-58).

- (1) a. If I am being frank, John lied to Bill.
b. Frankly speaking, John lied to Bill

He concludes that speaker-oriented adverbs predicate over sentences and speakers from sentence-initial position, whereas subject-oriented and VP adverbs are more deeply embedded within the sentence itself.

Building upon his work, Bellert (1977) notes that Jackendoff’s ‘speaker-oriented’ adverbs do not constitute a homogeneous group but vary in their purpose and structure. In particular, she shows that syntactic position alone does not adequately characterise different adverb classes; instead, she divides adverbs into classes according to the number and type of semantic arguments they take. Of particular importance are those adverbs which she defines as taking two arguments, which she terms pragmatic and modal adverbs.²

Modal adverbs (corresponding to Cinque’s (1999) evidential and epistemic adverbs) in Bellert’s (1977) account take the truth of the proposition of the sentence as one argument. Examples include *probably*, *certainly* and *evidently*. Such adverbs do not have negative counterparts and cannot be negated independently of the sentence, as shown in (2).

- (2) a. *Improbably, John has come (meaning: It is improbable that John has come)
b. *Not evidently, John has come. Bellert 1977:343, example (17)

shown here relates to the question of indexicals (if indeed it does) for future research.

²Bellert (1977) also includes evaluative adverbs in her analysis, but I leave these aside here as they do not exhibit orientation shifting.

They are also above sentential negation, as in (3).

- (3) a. John probably never ran so fast.
 b. *Never did John probably run so fast. Bellert 1977:346, examples (30) and (32)

Though they can occur in if-then clauses, Bellert notes that modal adverbs do not occur in questions because an evaluation of the truth cannot be made of a proposition while that proposition is being questioned. However, she concedes that some modal adverbs with “an additional meaning component”, such as *definitely* and *perhaps* can occur in questions, as in (4), as they imply a particular answer.

- (4) a. Has John perhaps been here before?
 b. Has John definitely made up his mind? Bellert 1977:344, examples (22) and (24)

In contrast to modal adverbs, Bellert notes that only the class of pragmatic adverbs - Cinque’s illocutionary adverbs - are truly speaker-oriented in that they take the speaker as an argument. These adverbs include *frankly*, *sincerely*, *honestly*, amongst others. The other argument is the proposition, or content, of the sentence. As Bellert explains, “The speaker characterizes his attitude towards *what* he is saying” (1977:349, original emphasis). Correspondingly, these adverbs also do not have negative counterparts (that may be used as sentential adverbs) and are also above sentential negation. Furthermore, these adverbs are possible in non-asserted sentences such as performative sentences and questions.

Bellert refines Jackendoff’s criteria carefully using convincing semantic arguments. Her work is also important as an early example of analyses which consider adverbs to contain some kind of argument structure; she even entertains the idea of a kind of performative analysis in the style of Ross (Bellert 1977:349f). This is an important precedent for the account put forward in this paper, though it will be shown that the modal adverb category can be divided further and the behaviour of adverbs in questions requires further consideration.

Later investigations of apparently speaker-oriented elements have shown that they in fact orient to the addressee in questions, raising the question of point of view (PoV). Garrett (2001) analyses grammaticalised evidentiality particles in Tibetan, noting that they are speaker-oriented in declarative sentences but addressee-oriented in questions; in his words, “the origo [ego] of a question is always the person to whom the question is asked” (2001:230). He suggests that the origo shift between declaratives and interrogatives occurs because the hearer is ‘inside’ the question and opts for a partially semantic, partially pragmatic approach to explain this. Building on Hamblin (1973) and Karttunen’s (1977) analyses of questions as sets of possible or true answers, Garrett proposes that the answer-set consists not of propositions, but of asserted speech acts made from the hearer’s perspective. Moreover, he represents the hearer and speaker as free variables which form an ordered set of participants in the assertive speech act. Therefore, where Hamblin would give the denotation of “Can you play football?” as a set of {You can play football, You cannot play football}, Garrett proposes something like {“I tell you that I can play football”, “I tell you that I cannot play football”}.

However, this is the extent of Garrett’s semantic analysis. He suggests that these variables and their relationship with the evidential markers are determined through context alone, and that “the origo shift comes for free as long as assertions have authors and questions have answerers”

(2001:250). This reliance on pragmatics seems at odds with the fact that the origo shift is obligatory in Tibetan (cf. De Villiers et al. 2009) and yet it is not clear exactly how he conceptualises the discourse participants and their relationship with evidentiality in his semantics. However, he also notes structural parallels between orientation in matrix and embedded clauses (albeit with a data set which underdetermines the phenomenon), which will be shown to be important in the analysis to follow.

Clearly, a successful analysis of syntax-related shifting must also explain how the discourse participants are represented in syntax and the nature of any relationship between them. It was first noted by philosophers that there are parallels between typical declarative sentences and clauses embedded under performative verbs; Austin (1962:32) proposed that every illocutionary act contains a performative verb in some form. Following Austin's work, Ross (1970) suggested that speakers and addressees were covertly represented in syntax, at least in performative verb constructions. He proposed this to account for a range of phenomena, most notably cases of reflexive pronouns which are grammatical despite lacking an overt antecedent (examples in (5) from Ross 1970:228, 232).

- (5) a. This paper was written by Ann and myself
 b. As for myself, I won't be invited

Ross also presents evidence from deleted arguments. He claims that in some dialects the following examples are acceptable and that the dropped arguments implicitly relate to a first-person discourse participant, as illustrated in (6) from Ross (1970:236, 238).

- (6) a. Sid is coming with³ ~~me/us/*you/*him~~
 b. A friend of ~~mine/of ours/*of hers~~ is going to drop by

Ross presents two possible solutions to this problem. His first solution, based on the behaviour of performative verbs, is that there is a phonologically null performative verb above all declarative sentences. The subject of this verb is first-person and the object second-person (Ross 1970:252). This is a purely syntactic solution which does not rely on semantic or pragmatic principles and which only extends to affirmative declarative clauses. His second solution, which he terms the 'pragmatic analysis', rests on an early interpretation of the syntax-discourse interface. Ross suggests that elements "in the air", i.e. in the discourse context, are available antecedents just like any element in the deep structure (Ross's terms) and, by extension, relations between the elements "in the air" and those in the syntax are constrained by the same kind of hierarchical rules which constrain syntactic relations. Ross suggests that the pragmatic analysis might be preferable to the syntactic analysis as the former does not have any of the 'tension' of the latter in terms of matrix clauses being technically embedded beneath the covert performative phrase.

However, Ross asserts that any elements called upon from the context would have to be "hierarchically grouped to form a structure which is exactly the same as that of a normal clause in deep structure" (1970:255). Although it would be possible to take elements from context as antecedents, it might not be possible to order them hierarchically as would be necessary to ensure the correct antecedent for a syntactic element. Therefore, an account of this kind could

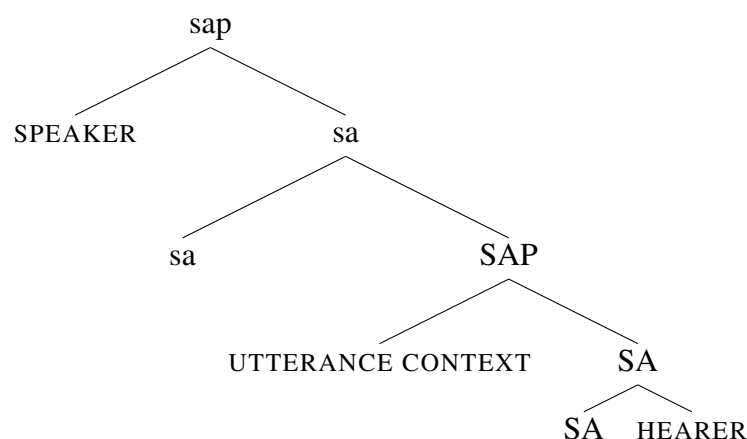
³The accent here represents prosodic emphasis which often occurs in this construction.

not be purely pragmatic but would have to call upon syntactic principles to form the necessary hierarchical structure.

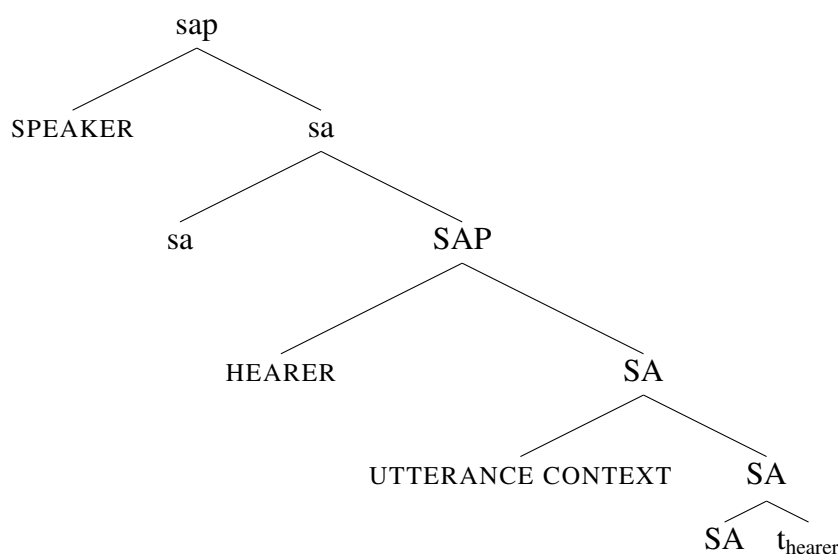
Ross's analyses were largely abandoned during the Government & Binding period in generative linguistics. However, with the advent of the Minimalist Program (Chomsky 1995), particularly phase-based iterations thereof, other scholars have proposed similar analyses. Speas & Tenny (2003) envisaged a syntactic representation of speaker and addressee operators which brings together the intuition of discourse participants in the syntax with established restrictions on the role of pragmatic forces within grammar. Speas and Tenny suggest, as did Ross, that syntactically-represented discourse participants are hierarchically organised. However, they refute the idea that certain speech acts are tied to certain clause types, as questions can be answered with questions and declarative sentences can encode implicit requests and so on. This casts doubt on whether Ross's analysis should be restricted to performative declarative sentences after all, as there are many different types of sentence which are subject to illocutionary force and which therefore have implications for speakers and hearers. As support for this view, Speas and Tenny observe that Cinque's (1999) Mood_{SpeechAct} projection, which encodes important aspects of discourse participants' involvement in the speech act, is overt in any language which contains elements such as interrogative morphemes and sentence particles, which of course are not limited to (or in some cases, ever permitted in) performative declarative clauses Speas & Tenny (2003:317).

Speas and Tenny propose that the speaker and the addressee are represented as arguments within the extended Speech Act Phrase along with an operator-like representation of the utterance context (UC), and that this Speech Act domain is above the sentence itself. The motivation for this is that these discourse roles are grammaticalised in some languages, such as in Basque allocutive agreement. They represent a declarative structure as in (7) and an interrogative one in (8). Note that the hearer is moved to a higher position in the tree in the interrogative case, which Speas and Tenny claim is analogous to dative movement of the indirect object.

(7)



(8)



Note that the difference between the two structures is that the hearer moves up to adjoin to SAP in interrogatives.⁴ Speas and Tenny motivate the declarative configuration on the idea of the UC as the theme and the hearer as the goal of the utterance, though this would typically see the UC generated as the complement to SA (cf. Bruening (2010)). However, it is not clear why dative-like movement (of the hearer) should apply in this context or what motivates it. These criticisms do not undermine the theoretical advances made by Speas and Tenny on the previous literature, but this paper shall address these questions in later sections.

3. Adverb orientation: the phenomenon

3.1. Key terms

Turning to the empirical data, adverbs which shift orientation constitute two of the four ‘high’ adverb categories identified by Cinque (1999), namely illocutionary and evidential adverbs. These terms will be used throughout. I will adopt Jackendoff’s (1972) definition of adverb orientation insofar as the adverb describes the attitude(s) *or* state of knowledge of an individual. However, these adverbs do not always describe the attitude(s) of the *speaker*. These adverbs will be examined in the context of yes-no interrogatives uttered as straightforward interrogative acts. Groenendijk & Stokhof (1994:1055) make the distinction between syntactic interrogative clauses, pragmatic interrogative acts, and semantic questions, and the focus here will be on syntactically interrogative non-rhetorical yes-no questions involving inversion. The data show that adverbs in this kind of interrogative clause describe the attitude/state of knowledge of the addressee as ascribed to him/her by the speaker, or the attitude with which the speaker expects the addressee to respond. These adverbs are therefore addressee-oriented in such contexts.

⁴sap and SAP are both Speech Act projections, with sap as a shell to SAP.

3.2. Data

The orientation of illocutionary and evidential adverbs shifts consistently and systematically from SPEAKER in declaratives to ADDRESSEE in yes-no interrogatives, as shown in (9)-(11).

- (9) Illocutionary adverbs
- a. Seriously_{speaker}, Andy can play rugby.
 - b. Seriously_{addressee}, can Andy play rugby?
- (10) Evidential adverbs
- a. Allegedly_{speaker}, Ahmad is at the top of the list.
 - b. Is Ahmad allegedly_{addressee}⁵ at the top of the list?
- (11) Epistemic adverbs
- a. Ewan has probably_{speaker} gone to the dentist.
 - b. ?*Has Ewan probably gone to the dentist?
 - c. Ella is definitely_{speaker} at the top of the list.
 - d. Is Ella definitely_{addressee} at the top of the list?

As (11b) shows, most epistemic adverbs are ungrammatical in questions in English. They are not available for shifting and so may only take a speaker-oriented reading. However, the epistemic adverbs *definitely* and *perhaps* are different from other epistemic adverbs as they are available in questions and also shift. These facts even hold when the context would seem to favour the opposite interpretation as in (12).

- (12) Illocutionary adverbs
- Context: The manager of a rugby team is likely to lose his job soon as his team has been performing badly. This weekend's match will determine his future but he is a player short and asks a friend (who doesn't care about rugby) for help finding another player.
- a. Friend: I know you will lose your job if you lose the match this weekend - seriously, Andy can play rugby.
Interpretation: I am being serious/?take me seriously - both express that the speaker is being serious
 - b. Manager: If we lose the match at the weekend I will lose my job - seriously, can Andy play rugby?
Interpretation: The speaker's question is serious/the answer from the addressee must be serious - addressee orientation remains despite context

Note that, as shown in (13), the shift is not related to the grammatical function of the arguments within the proposition.

⁵Note that evidential adverbs and epistemic adverbs are not considered natural in sentence-initial position in English interrogatives. However, this does not impact on the proposed analysis.

- (13) a. It looks like it will rain tomorrow. (Speaker-orientation)
 b. Does it look like it will rain tomorrow? (Addressee-orientation)

In (13), the evidential meaning of the matrix clause orients to the speaker in declaratives and the addressee in interrogatives. The phenomenon also seems to be robust cross-linguistically, as judgements in French and Greek mirror those in the English cases. Whether the phenomenon holds in embedded contexts is less clear, however. As noted by Banfield (1982) and Rooryck (2001), speech act markers such as parentheticals are not permitted in embedded contexts. Initially, it seems that illocutionary adverbs are permitted, as (14) illustrates.

- (14) a. Dima told Nathan that Jessica seriously wants to come to the party.
 b. Dima told Nathan that Jessica honestly spoke to Paul.

However, in these contexts the adverbs are interpreted as VP adverbs which modify the verb and its arguments rather than the sentence as a whole; *seriously* is interpreted as a degree adverb in (14a) and *honestly* as a manner adverb in (14b). This is supported by data from French, in which (15) is ungrammatical because *sérieusement* cannot be interpreted as a VP adverb.

- (15) ?*Guillaume dit à Jean que Marie voulait sérieusement aller à la
 Guillaume say.3SG to Jean that Marie want.3SG.IPFV seriously go.INF to the
 fête de Martine
 party of Martine
 ‘Guillaume says to Jean that Marie seriously wanted to go to Martine’s party.’

Note that in the above examples, *seriously* and *honestly* are not sentence-initial. They can precede embedded clauses when pronounced with comma intonation and retain their illocutionary meaning, but this appears to degrade the sentence, as in (16).

- (16) a. ?Dima told Nathan that, seriously, Jessica wants to come to the party.
 b. ?Dima told Nathan that, honestly, Jessica spoke to Paul.

However, evidential adverbs like *allegedly* and the epistemic adverb *definitely* can occur in both matrix and embedded clauses, as (17) shows.

- (17) a. Marie allegedly gave her lottery winnings to charity.
 b. John told Harry that Marie allegedly gave her lottery winnings to charity.
 c. Marie definitely will be at the party
 d. John told Harry that Marie definitely will be at the party

The adverb searches for the appropriate discourse participant in the clause directly above its own. The overt performative structure of the matrix CP in (17d) contains the speaker and addressee to which embedded adverbs orient. This is confirmed by informants in English, French and Greek. Furthermore, the adverb in the matrix clause orients to the discourse participants. (17c) and (17d) are repeated below with the adverb’s orientation indicated using subscript.

- (18)
- a. Marie definitely_{speaker} will be at the party.
 - b. Will Marie definitely_{addressee} be at the party?
 - c. John told Harry that Marie definitely_{John} will be at the party.
 - d. John asked Harry whether Marie will definitely_{Harry} be at the party.
 - e. Amy told Ben that Charlie told David that Emma told Flora that Marie will definitely_{Emma} be at the party.
 - f. Amy asked Ben whether Charlie asked David whether Emma asked Flora whether Marie will definitely_{Flora} be at the party.

The examples show that the adverb orients to the most minimally distant ‘speaker’ in declarative cases and the most minimally distant ‘addressee’ in interrogative cases. It is not influenced by the grammatical status of the arguments in its clause relative to the discourse participants, and the embedded subject does not act as an intervener. These intuitions are confirmed by the felicity of the continuation in (19).

- (19)
- a. John told Harry that Marie definitely_{John} will be at the party, even though she’s not sure she’ll make it.
 - b. #John told Harry that Marie definitely_{speaker} will be at the party, even though she’s not sure she’ll make it.
 - c. #John told Harry that Marie definitely_{Marie} will be at the party, even though she’s not sure she’ll make it.

It will be proposed that, by analogy with the overt performative structure of the matrix clause, the discourse participants are represented as the arguments of a covert speech act head above matrix CP in section 4.2. In section 5 the question of why the matrix object is not a possible antecedent in (19a), despite being a valid speech act participant, will be addressed.

4. A syntactic approach

I will now present a structural representation of adverbs which shift, showing that their syntax is key to their interpretation. The syntactic subject of the adverb will be shown to be coreferential with a syntactic representation of the discourse participants above matrix CP.⁶ This will provide an elegant and minimal account for orientation shifting in adverbs, which falls out of independently motivated syntactic principles.

⁶An anonymous reviewer notes that “the choice of a syntactic or a pragmatic approach to [adverb orientation] has to be made only on the basis of interpretation as there is no overt evidence to decide in favour of either option”. It is true that an examination of adverb orientation does not alone settle the syntax vs. pragmatics debate. However, in conjunction with work on other grammaticalised shifting phenomena and work on discourse markers such as Hill (2007) and Haegeman (2014), the current analysis of adverb orientation not only provides support for the syntactic analysis but also shows how the proposed Speech Act structure interacts with non-grammaticalised lexical items.

4.1. The adverb's argument

It is uncontroversial, following Bellert (1977), to suggest that adverbs which interface with the discourse can take semantic arguments. Focusing on illocutionary adverbs, Bellert suggests that they take two arguments: the speaker and the content — specifically the proposition — of the sentence (1977:349). The adverbs in question here are outside of the proposition expressed in the sentence but they are dependent upon it; specifically, these adverbs relate a property (seriousness, frankness etc.) to an entity with respect to the proposition expressed in the main clause.

The entity and the property are represented in the syntax and are pronounced overtly in combination as the adverb itself. In order to satisfy the Projection Principle (Chomsky 1981), which requires that the properties of lexical items must be preserved during the derivation of a sentence, the entity should also be represented itself, as a nominal element in the subject position of (in this case) the adverbial projection. However, the adverb cannot assign case to this subject, so the subject is never realised overtly. It is the only syntactic argument that the adverb has, because the adverb does not take the sentence as an argument, but the adverbial projection modifies it. These characteristics suggest that the adverb's subject is therefore a PRO and is subject to the principles of control.

It is now important to examine the characteristics of the adverb's PRO, first taking contexts in which sentential PRO receives an arbitrary interpretation. If the adverb is sentence-initial, its PRO does not receive an arbitrary interpretation.⁷ However, when evidential adverbs are sentence-internal, as in (20), their orientation is uncertain between speaker- and arbitrary-orientation.

- (20) a. Apparently_{speaker}, PRO_{arb} to commit a crime is PRO_{arb} to face censure.
 b. PRO_{arb} To reportedly_{speaker/arb} have committed a crime is PRO_{arb} to face censure.

If we take an approach to PRO_{arb} along the lines of Epstein (1984), we assume that PRO_{arb} is a variable bound by an unselective universal operator in the IP domain. This universal operator is therefore lower in the structure than the representations of the discourse participants which will be presented in section 4.2. As such, this operator will never be a valid antecedent for the sentence-initial adverb's PRO, which is in a position above IP. However, when the evidential adverb is sentence-internal, as in (20b), its PRO can either orient to the discourse participants or to the universal operator. I propose that speaker-orientation is still (marginally) available, even though the universal operator is closer, because the adverb's PRO is sensitive to the discourse participants and as such will try to orient to a discourse participant in every case. As a result, the orientation of the adverb's PRO is unclear in this case.

Turning to contexts of 'non-obligatory' control (cf. Roberts (1997)), the adverb's PRO, like

⁷The adverb *definitely* also resists an arbitrary interpretation, despite not being able to front to a sentence-initial position, as (i) shows.

- (i) a. PRO_{arb} To definitely_{speaker/*arb} find a partner, use a dating service.
 b. *Definitely, PRO_{arb} to find a partner, use a dating service.

For the moment I assume that this is related to the special property of *definitely* which allows it to shift in the first place (cf. Bellert 1977). The details of this will be left for future work.

other typical PROs, is sensitive to such contexts. In clauses containing wh-movement, such as (21), typical PRO does not require a controller.

(21) John asked [how [PRO to shave oneself]] Roberts 1997:138, example (38)

In wh-questions, the adverb's PRO must take one of the discourse participants as a controller, but it is ambiguous between the SPEAKER and ADDRESSEE, as in (22).

(22) Seriously_{speaker/addressee}, who can play rugby?

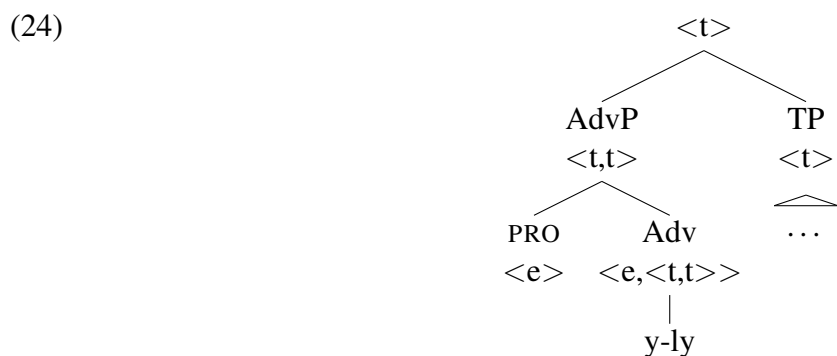
It is clear then that the adverb's PRO subject is much like any other example of PRO, except that it is particularly sensitive to the discourse participants.

In terms of compositionality, the PRO merges with the adverb before the adverb merges with the larger structure. This is because the adverb does not actually modify the proposition, but expresses the discourse participant's attitude towards it. Semantically, the adverb is a function mapping individuals to propositional modifiers. The entire adverbial projection (i.e. the expression of the discourse participant's attitude) then modifies the sentence, because the proposition's meaning and truth values are the same regardless of the discourse participant's attitude. This is illustrated in (23).

(23) If p is a proposition, x is an individual, and y -ly is an argument-taking adverb, then:

- a. y -ly-for(x), (p)
- b. #For (x), y -ly(p)

Assuming therefore that the adverbial projection is of type $\langle t,t \rangle$ on the basis of its being a proposition that modifies a proposition, an analysis of the semantic types of the elements involved suggests that PRO must merge with the adverb within AdvP and not outside of it, as illustrated in (24).⁸



⁸Thanks to George Tsoulas for this observation.

I have already described how the adverb's PRO argument must be controlled by an antecedent which is a discourse participant higher in the structure than PRO itself;⁹ therefore, the discourse participants too must be represented above matrix CP.

This is similar to Ross (1970) and Speas and Tenny's (2003) proposals and will elegantly explain this shifting phenomenon. The key difference between Ross's proposal and mine concerns what constitutes the head of the covert structure. Ross claimed a direct correspondence between affirmative declarative sentences both with and without performative constructions, and that the latter were formed by the deletion of the performative construction from the former, as shown in (25).

(25) I'll be there = (e.g.) ~~I promise you that~~ I'll be there

This was rejected by Fraser (1974), Gazdar (1979), Leech (1983) *inter alia* for a number of well-argued reasons, for example the fact that not all performative verbs have first-person subjects and second-person objects, that there is no one-to-one mapping between utterances and types of speech act, and that it is possible to stack performatives, posing further problems for the interpretation of the (most) subordinate clause.

It must therefore be made clear that the proposal is not that every speech act is a half-pronounced performative structure, nor that every clause counts as a separate speech act. Instead, I will propose that there is a covert operator which relates to the matrix clause type and which selects its arguments on this basis. I will be representing this operator using English verbs of communication, but this should be interpreted solely as a representation. I will elaborate on this idea in section 5.

4.2. *The covert Speech Act structure*

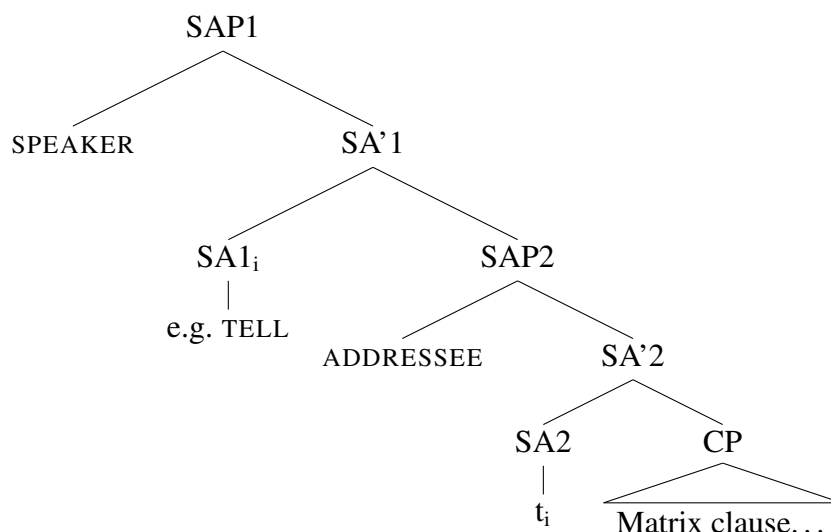
To account for the facts in section 3.2, I propose a covert speech act head (SA) which permits a certain configuration of arguments in its phrase depending on the clause type it c-commands. The SA is the head of a covert Speech Act Phrase (SAP) above the matrix CP.

The structure, as a first analysis, is that of a three-place predicate, with the SPEAKER in the specifier (subject position) of the whole projection, the sentence/matrix CP as the complement of the SA head (direct object position) and the ADDRESSEE as the complement of the higher SA head (in the indirect object position). The reader may note that the structure proposed is similar to that used by Hill (2007), Miyagawa (2012) and Haegeman (2014).

⁹I assume that this is not a case of backward control, as the matrix subject does not control the PRO in matrix cases, even if it is a discourse participant.

- (i) a. You are definitely_{speaker} the best footballer in the class.
- b. #You are definitely_{you} the best footballer in the class.

(26)



The advantage of this structure is that it is an accurate analogy¹⁰ for the relationship between the discourse participants and the discourse itself based on verbs of communication. However, it does not yet fully reflect the difference between different clause types; specifically the difference between declarative and interrogative clauses. It is in the following sections that my proposed structure will diverge from those proposed by Hill (2007), Miyagawa (2012) and Haegeman (2014).

4.2.1. Differences in declarative and interrogative SAP structures

I will first refine the structure for declarative SAPs. It is both intuitive and empirically sound to suggest that only speakers and not addressees are obligatorily structurally represented in declarative SAPs. Intuitively, declarative sentences may be uttered without an addressee, as they can be stated to no-one in particular, to an audience which is not one definable entity or set of entities, or to someone who may not even be the intended audience for the sentence. This is not the case with interrogatives; although the speaker and the addressee may in some contexts be the same person, there is always a specific addressee in mind,¹¹ otherwise the act of asking a question might not provide the speaker with the new information s/he requires.

Deleted arguments provide empirical support to these intuitions; consider (27)-(28).

¹⁰This is not to say that the SAP is analogous to a parenthetical such as “Louise says” in (i) below:
(i) Louise says, “It’s cold in here”.

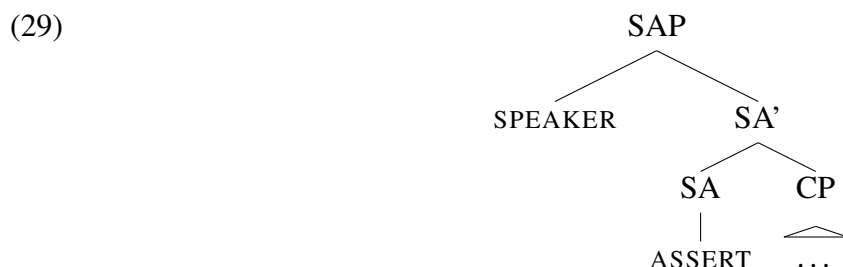
This is because recent work in child developmental literature which suggests that children respond differently in Theory of Mind tasks when the direct speech of the characters in the task is framed with a parenthetical and when it is not (De Villiers 2014), hence to claim a covert parenthetical would be to claim a correspondence which does not appear to be psychologically real.

¹¹Note that the addressee represented in the speaker’s mind will be the addressee intended by the speaker, not another potential addressee who may or may not be present in the discourse context. As such, whilst rhetorical questions will have an addressee — like all syntactic questions — they are in the unusual position of having an addressee which is coreferential with the speaker, as the speaker intends to answer his/her own question in such contexts. Thanks to an anonymous reviewer for his/her thoughts on this point.

- (27) a. The boss wants to meet *me/?you/us* at 3pm.
 b. Does the boss want to meet *me/you/us* at 3pm?
- (28) (Context: a company only accepts payments in pounds sterling)
 a. The client tried to pay *me/*you/us* in dollars!
 b. Did the client try to pay *me/you/us* in dollars?

In (27a) and (28a), the preferred reading is that the deleted argument is co-referential with a first-person argument. The second-person reading is strange and dispreferred, if not outright rejected by informants (cf. also Ross's examples in (6)). Informants report that further context is required to readily construe a second-person reading. In contrast, both first- and second-person readings are available in (27b) and (28b). There is other cross-linguistic evidence that there may be a divide between the types of clauses which contain an addressee and those which do not, for example Haegeman's (2014) survey of West Flemish discourse markers, which notes that there are different markers for rhetorical questions as opposed to other interrogatives, and that certain markers are only available with declarative and imperative sentences, but not with interrogatives. A more extensive and detailed survey of these facts will be left for future research, but the view taken here is that the inclusion of the addressee in speech act phrases must be motivated, for example by the addressee taking the role of answerer as in interrogatives, rather than being simply assumed.

I will therefore modify the structure in (26) to show that only SPEAKERS are represented in declarative SAPs.¹²



The SA in declarative SAPs is something like ASSERT. This reflects the fact that there are only two arguments in the SA structure of declarative sentences.¹³ This means that, as the only

¹²It could be argued that addressees are also represented in declaratives, as example (28a) is acceptable with the first-person plural pronoun *we*. However, in this case the speaker is speaking for other people and including others in his perspective. As such, the other participants included within *we* are not ADDRESSEES, and may not even be present for the discourse at all, but are merely people who share the same relevant coordinates as the SPEAKER. Furthermore, languages which show a distinction between the exclusive and inclusive first-person plural pronoun illustrate the optionality of including the addressee. It is clear based on other facts (including binding and the absence of plural readings in speaker/addressee-oriented phenomena) that such phenomena differ from pronouns and pronominal relations, but resolving and refining these differences lies outside the scope of this paper.

¹³An anonymous reviewer notes that distinctions like the one between (i) and (ii) in the scenario below suggest that the addressee might not be absent after all.

I (A) am walking with a friend (B) and hear her whisper something, but I don't hear what.

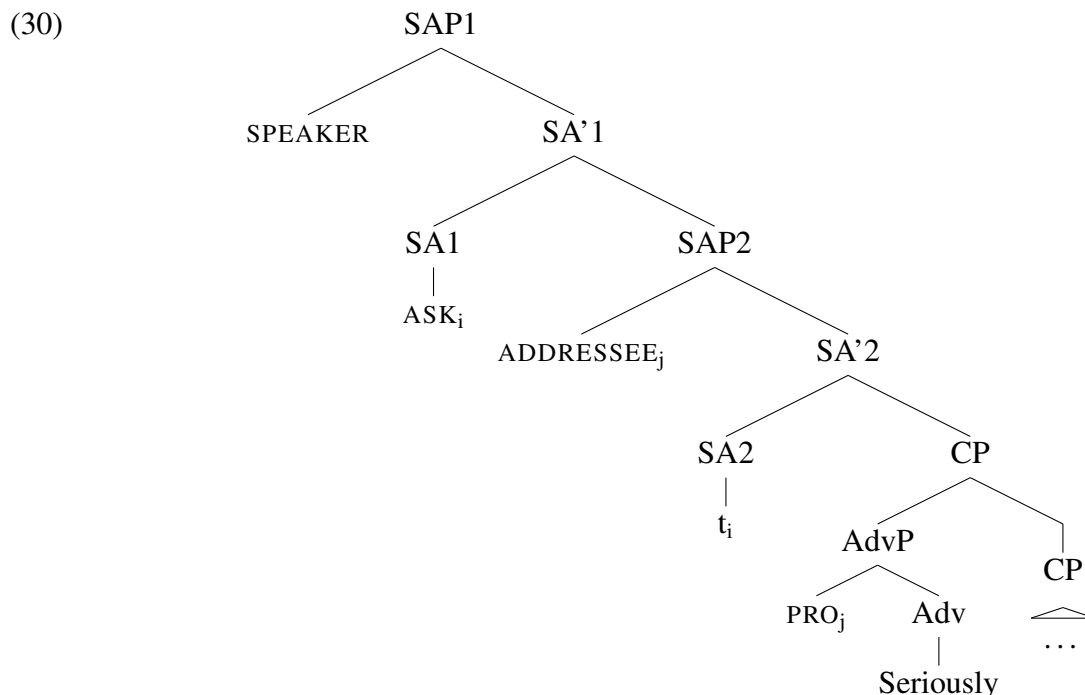
(A): Sorry?

(B)i. Nothing, I'm just talking to myself.

(B)ii. Nothing, *I'm just talking.

available argument, the SPEAKER controls the PRO argument of the shifting adverb in CP.

However, in interrogative SAPs both the speaker and addressee must be present, as example (27) shows. This means that the SA in interrogative SAPs is a three-place predicate as in (26), but the SA is something like ASK to show that this structure solely applies in interrogative contexts. I have included the adverb in (30) to demonstrate its position within the matrix CP.



This now means that the adverb's PRO has two potential antecedents to choose from. However, the ADDRESSEE when present is hierarchically closer than the SPEAKER. Therefore, following Rosenbaum's (1970) Minimal Distance Principle (MDP), the ADDRESSEE always controls the adverb's PRO in interrogative clauses.

4.2.2. Embedded contexts

However, as noted in section 3.2, shifting adverbs which are generated lower in Cinque's hierarchy shift in embedded as well as in matrix contexts (cf. example (18)). This is also true in both French and Greek. In contrast, illocutionary adverbs can only shift if pronounced with comma intonation and then the sentence is still considered degraded. The paradigm is illustrated in (31)-(33).

However, this can be attributed to the properties of the verb 'talk', which is rarely used without some kind of object. Note that the responses in (iii) would be perfectly fine if uttered by B.
 (iii) Nothing, I'm just wittering/chatting away/talking rubbish.

- (31) Illocutionary adverbs
- a. *George told Nikki that honestly_{George} Norman had won the race (only VP-adverb reading available)
 - b. ?George told Nikki that, honestly_{George}, Norman had won the race
 - c. *George asked Nikki whether honestly_{Nikki} Norman had won the race
 - d. ?George asked Nikki whether, honestly_{Nikki}, Norman had won the race
- (32) Evidential adverbs
- a. George told Nikki that Norman had allegedly_{George} won the race
 - b. George asked Nikki whether Norman had allegedly_{Nikki} won the race
- (33) Definitely
- a. George told Nikki that Norman had definitely_{George} won the race
 - b. George asked Nikki whether Norman had definitely_{Nikki} won the race

But why should comma intonation improve (if not render grammatical) the examples in (31b) and (31d)? Emonds (1976:61) suggests that comma intonation around an illocutionary adverb in an embedded clause allows the illocutionary adverb to be distributed as a parenthetical throughout that embedded clause. Furthermore, Emonds draws a parallel between parentheticals pronounced with comma intonation and direct speech contexts (1976:23-25, 44). Specifically, he notes that comma intonation is used to convey direct speech, creating a partition between the parenthetical and the direct quotation, across which the third-person matrix subject of the parenthetical is referred to using the first-person in the quotation. This is illustrated in (34).

- (34) George said to Nikki, “Honestly_{George}, Norman won the race. I_{George} saw it happen.”

With the caveat that cases such as (31b) and (31d) are only marginally acceptable, it seems that by pronouncing the adverb with comma intonation, the indirect quotation is given a ‘direct-quotation-like’ reading. This creates a kind of embedded root environment, thereby marginally permitting illocutionary adverbs (clearly a root phenomenon) despite their presence in an embedded clause. Quasi-quotational contexts, to use the terminology of Bayer (2004), may also be induced in other syntactic environments. In Hiberno English (McCloskey 2006), some North West English varieties (Woods 2014), African-American English (Green 2002) and New York English (Craig Sailor, p.c.), subject-auxiliary inversion, another root phenomenon, is possible in complement-less embedded interrogative clauses (as in (35), note the contrast in acceptability of (35c)).

- (35)
- a. He asked me would I cook tea.
 - b. I asked Jack was she in his class.
 - c. *I asked Jack whether was she in his class. Examples from McCloskey (2002)

As expected, speakers who accept (35) also accept illocutionary adverbs with shifted interpretations in such contexts, as in (36).

- (36) a. He asked me, seriously_{me}, would I cook tea.
 b. I asked Jack, honestly_{Jack}, was she in his class.

Note that comma intonation is obligatory (just like in matrix clauses) but these examples are not degraded for speakers of these dialects, unlike the examples in (31b) and (31d).

In sum, illocutionary adverbs are root phenomena that are acceptable in embedded root environments which promote a quasi-quotational context. Such contexts can be created through the use of comma intonation and, in dialects such as Hiberno English, complement-less embedded interrogatives. However, the MDP still holds, as the real-world speaker and addressee are maximally distant and therefore not available to control the adverb's PRO in these cases.

5. The role of logophoricity

I have shown that the adverb's argument is a PRO, and therefore it must be controlled. But what kind of control is the adverb's PRO subject to? Williams (1992) proposes two forms of control for understood subjects in adjuncts. Firstly, Predicative Control (PC) involves an adjunct which is directly predicated of a subject and strict locality requirements are imposed. He judges that there is no PRO in these cases (contra Chomsky (1981) and Stowell (1983)) as the adjunct directly assigns its theta-role to the subject, for example in (37).

- (37) John_i arrived asleep_i

However, Logophoric Control (LC) has no locality requirement and theta-role assignment is separate from indexing. It is therefore considered to involve a PRO and there is a requirement in these cases for the antecedent to be a discourse participant.

It appears that LC is a more appropriate analysis than PC for the kind of control seen in illocutionary and evidential adverbs. An argument against PC is that there is no full DP subject in the same clause as the adverb to which it can assign its theta role (i.e. instead of assigning it to a PRO subject). Even when the matrix subject precedes the adverb (presumably due to some kind of movement) it is clear that the adverb cannot be predicated of this subject given the interpretation that it receives (cf. (19)). This is because the matrix subject has already been assigned a theta-role by the matrix verb and because the matrix subject is not necessarily a discourse participant.

Furthermore, the cases of PC described by Williams which involve adverbs all involve VP adverbs. It is crucial to note that illocutionary and evidential adverbs are *not* simply a kind of manner adverb. This is illustrated by the following paraphrases, of which (38a) does not paraphrase the meaning of the illocutionary adverb whereas (38b) and (38c) do.

- (38) “Seriously, you can play rugby.”
 a. #I said seriously [that you can play rugby]
 b. I said thus: “Seriously, you can play rugby.”
 c. I convey that I am serious about the proposition that you can play rugby.

Importantly, the adverb and its meaning are clearly part of the utterance rather than part of the utterance context, though other linguistic and non-linguistic factors may make it seem to be so. It has already been shown how the adverb orients to the discourse participants which are represented in a SAP structure above the matrix CP. It is clear therefore that the adverb's subject cannot be and is not locally controlled (as PC would require) and that it is sensitive to the discourse participants (as required by LC). Now it remains to be determined how the adverb's PRO finds its antecedent from among the discourse participants provided by the SAP structure. This section details how the PRO in shifting adverbs is sensitive to the logophoric centre of the speech act.

5.1. *The logophoric centre*

First, the term 'logophoric centre' must be defined. Sells (1987:457) proposes that the logophoric 'self' is the individual "whose mental state or attitude the content of the proposition describes"; so in the terms already used in this paper, the individual to whom the adverb orients. However, I will avoid the term 'self' as I will make some assumptions which may not be originally intended by Sells, and will refer to the *logophoric centre* instead.

It is necessary to define the logophoric centre because the data in section 3.2 show that there are arguments which precede the adverb but cannot serve as an antecedent for the PRO. For example, the subject of the clause in which the adverb resides may precede the adverb, but this subject does not act as an intervener between the adverb and the discourse participants, as in (39).

- (39) a. Seriously_{speaker}, you can play rugby.
 b. You seriously_{speaker/*you} can play rugby.

Moreover, neither the embedded subject nor the matrix object block control of PRO by the matrix subject in embedded declaratives, as illustrated in (19a) and (19c). Two consequences follow; firstly, the adverb's PRO is not simply controlled by the nearest antecedent, but by the nearest *viable* antecedent. Secondly, the licensing factor which determines viability is common to both the discourse participants and the matrix arguments of a verb of communication.

I propose that logophoricity is this extra factor because adverbs in the same clause as an intent verb orient to the intent verb's subject.¹⁴ This is because verbs such as *intend* express the mind and consciousness of their subject, so the subject becomes the most minimal viable antecedent, as in (40).

¹⁴Note that this is only the case when the adverb follows the intent verb; therefore *seriously* never orients to the subject of an intent verb, as (i) shows.

- (i) a. Seriously_{speaker}, Marie intends to go to the party.
 b. Frankly_{speaker}, Marie intends to go to the party.
 c. Marie seriously intends to go to the party.
 d. Marie honestly intends to go to the party.

In (i.c), *seriously* can only be interpreted as a degree adverb.

- (40) John told Harry that Marie intends definitely_{Marie} to go to the party, even though she's not sure she'll make it.

Note that logophoricity is not a perpetually available mechanism; it exists because there is a speech act or an act of expression of some kind being performed. In this way, it does not solve the problem of adverb orientation alone, but falls out of the structures that have been proposed in the previous sections. Furthermore, it must be highlighted that, in the case of reported speech, there will be two logophoric centres; one for the reported speech act and one for the main speech act. This fact is important because it means that the adverb is limited by the speech act which it modifies; an embedded adverb may not take wide scope over the entire sentence.

I shall now show that the SA operator determines which of its arguments is the logophoric centre of the main speech act in a similar way to overt lexical verbs of communication, and how this interacts with a theory of questions.

5.2. The SA as a logophoric predicate

Verbs of communication have lexical properties which determine the kind of speech act they introduce. For example, *say* and *tell* subcategorise for declarative CP complements, whereas *ask* and *inquire* take interrogative ones. They also differ as to whether they subcategorise for an indirect object (an addressee).

As noted in section 5.1, sentences with a matrix verb of communication have two logophoric centres: one for the main speech act and one for the embedded speech act. Sells notes that it is a lexical property of a verb of communication that its logophoric centre is predicated of its subject (1987:457). If a matrix verb of communication determines the logophoric centre for the embedded speech act, then by analogy the SA head will determine the logophoric centre for the main speech act. This proposal again works on the principle that it is the syntax and semantics of speech acts which determine adverb orientation, specifically the syntactic presence of the discourse participants above the matrix CP, and that the role of logophoricity here falls out of this fact.

Sells (1987:452, 454) refers to verbs of communication such as *say* and *ask* as logophoric predicates. The addition of a logophoric predicate above a non-logophoric statement induces logophoric behaviour in the (newly) subordinate clause, as seen in Icelandic (example (41) from Sells 1987:452).

- (41) a. *Ólafur hefur ekki enn fundið vinnu, sem sér_{Olaf} líkar
 Olaf has not yet found job.ACC that self_{Olaf} likes
 'Olaf has not yet found a job that he_{Olaf} likes.'
- b. Jón segir að Ólafur hefur ekki enn fundið vinnu, sem sér líkar
 Jon said that Olaf has not yet found job.ACC that self_{Jon/Olaf} likes
 'Jon said that Olaf has not yet found a job that he_{Jon/Olaf} likes.'

The logophoric pronoun *sér* cannot be bound by Olaf in (41a). However the introduction of the logophoric predicate "Jón says" permits either Jón or Olaf as the antecedent of *sér* in (41b). This fact, with others as presented in Sells's work, seems to show that the CP containing logophoric

elements must be subcategorised for by a logophoric verb in order for the logophoric element to be correctly bound (Sells 1987:473). I therefore propose that for a shifting adverb to be licensed, it must be contained within a CP c-commanded by a logophoric element. What is more, this logophoric element determines the logophoric centre of the speech act.

In terms of how the logophoric element (the SA operator) determines the logophoric centre, Kuno (1987) suggests that logophoric verbs mark both their speaker and addressee arguments as [+log], whether they are covert or overt. This is in contrast with Sells (1987), who claims that there is no primitive logophoric “speaker” role, though this does not preclude the structural representation of the speaker in syntax for other purposes, such as transmission of person features (see Baker (2008) and Sigurdsson (2011) *inter alia*). Furthermore, the proposal in this paper requires that there is only one logophoric centre and therefore one logophorically active argument in each speech act (cf. Speas and Tenny 2003), so Kuno’s ideas require examination.

Kuno claims that a full non-pronominal DP in the embedded clause cannot be co-indexed with either of the arguments of a logophoric verb (examples in (42) and judgements from Kuno 1987:110).

- (42) a. *That John was crazy was just one of the things Mary said to him_{John} (John is the addressee of Mary’s remarks)
 b. That John was crazy was just one of the things Mary said about him_{John} (John is not the addressee of Mary’s remarks)

Consider what it would mean for the addressee to have a logophoric role in (42). The addressee is not responsible in terms of form, content or point of view for any part of these sentences, and does not contribute to the setting of indexicals. It would be predicted that the addressee would be an anchor for some kind of meaning or coreference if it were in some way logophoric. However, the meaning and interpretation of sentence (42b) does not change whether Mary addresses it to Fred, George, Jane, or any other addressee. The meanings of the speech acts contained within (42a) and (42b) are the same. A small-scale survey of English native speakers also confirmed no differences in grammaticality between (42a) and (42b).

Furthermore, Kuno himself notes distinctions between the speaker and the addressee, for example in ‘as for X-self’ cases (example (43) from Kuno 1987:129).

- (43) a. As for myself, I won’t be invited
 b. ??As for yourself, you won’t be invited
 c. *As for herself, she won’t be invited.

Kuno argues that this is because the speaker’s logophoric role is more acceptable than the addressee’s logophoric role as an antecedent for reflexives. However, this seems stipulative, because both logophoric roles were deemed to motivate the same levels of ungrammaticality in (42), and because Kuno does not explain why and in what ways they are different. It is more motivated to suggest that the addressee is marginally available to some speakers in ‘as for X-self’ contexts because of the high degree of saliency of the addressee in the context compared with a third person, but that its marginal status and its variability across idiolects suggests that it is not a syntactic antecedent in the same way the speaker is.

It is therefore more parsimonious to suggest that logophoric verbs of communication which

take declarative CP complements assign one logophoric role to their external argument (their speaker). Furthermore, only SPEAKERS and not ADDRESSEES are part of the structure of the SAP headed by the declarative logophoric SA head. This is because addressee coordinates are not taken into account and are not available for binding in the matrix CP (at least in English), so their inclusion would be trivial. To represent the declarative SA head in the case of English, the transitive declarative verb *assert* is used because it takes two arguments (the speaker as its external argument and the sentence as its internal argument). As for a representation of the interrogative SA head, *ask* is ditransitive and takes three arguments (the speaker, the sentence as its direct object and the addressee as its indirect object).

However, only through a closer examination of the nature of questions are two vital facts motivated: one, that both the speaker's and addressee's coordinates are represented in questions; and two, that it is a lexical property of interrogative verbs of communication that the logophoric centre is predicated of its indirect object, i.e. the addressee.

5.3. The logophoric centre in questions

It is intuitive to suggest that the speaker is the logophoric centre of a simple declarative sentence; it is expected that the speaker can only share the contents of his or her own mind. But what about questions? Firstly, when a speaker utters an interrogative sentence, this sentence does not straightforwardly constitute a proposition. It represents a certain piece of information which the speaker requires but does not know and cannot therefore express the speaker's mind. Instead, the logophoric centre of the sentence becomes the person who will provide an answer, namely the addressee.

An accepted conceptualisation of questions is based on the fact that knowing the meaning of a question means knowing the meaning of the answer. From Hamblin (1973) and Karttunen (1977) to Groenendijk & Stokhof (1994), questions have been conceptualised as a set of possible or true answers, from which the addressee must pick the one which corresponds to his/her situation. This must mean that in order to present an answer-set from which one answer may be chosen, the speaker does not evaluate not his/her own situation, which can offer the alternatives but not choose the true one. Instead, to use Groenendijk and Stokhof's (1994) terms, the speaker chooses an addressee who *s/he considers* to have an epistemic situation which overlaps with the partition of the logical space that the speaker has created by asking the question.

Groenendijk & Stokhof (1994:1095) define answerhood according to a model M as in (44) (ϕ represents an answer and $?\psi$ a question).

$$(44) \quad \phi \models_M ?\psi \text{ iff } \exists w \in M : [\phi]_M \subseteq [?\psi]_{M,w}.$$

This means that in the speaker's world, a set of alternatives can be provided which includes the answer, but this is as far as the speaker can go. The speaker therefore chooses an addressee whose world - as far as the speaker is aware - contains both the set of alternatives $[?\psi]_M$ and the information to select the true one.

It is crucial that, if the speaker wants to elicit a valid answer, then *s/he* is responsible for choosing an addressee who has the requisite epistemic situation. This actually means that the

ADDRESSEE is identified and *constructed* by the speaker from the speaker's best knowledge. Furthermore, shifts in indexicality in echo questions suggest that the speaker relinquishes the logophoric centre to the addressee in interrogatives. Banfield (1978:436) notes that echo questions typically reproduce the questioned speech verbatim as in (45)—thus, even if the echo-questioner knows that Mary Ann Evans and George Eliot are the same person, s/he cannot replace material in the original question with his/her own perspective on or knowledge of the fact.

- (45) A. George Eliot wrote Middlemarch.
 B. George Eliot wrote Middlemarch?
 B'. #Mary Ann Evans wrote Middlemarch?

However, if the original speech contains first- or second-person pronouns, these shift in echo questions to be evaluated against the perspective of the original addressee, as (46) shows.

- (46) Q. Would you prefer a cup of tea?
 A. Would I prefer a cup of téa?
 A'. *Would you prefer a cup of téa?

As Banfield suggests, this shows that the speaker is “divorced” from the logophoric centre when asking questions (Banfield 1978:437). Because the speaker constructs the ADDRESSEE from his/her own knowledge, s/he can misrepresent the ADDRESSEE's coordinates without causing syntactic ungrammaticality. For example, in the discourse in (47), *definitely* orients to the ADDRESSEE B, even though the continuation of the discourse shows that the addressee herself may not be ‘definite’ about the proposition.

- (47) A. Did Margarita definitely_B go to your party?
 B. Presumably_B she came, because I saw her coat in the hall (but I didn't see Margarita directly).¹⁵

The same case holds with Tibetan evidentiality markers. If the speaker presumes indirect evidence on the part of the addressee, but the addressee has direct evidence, the speaker's sentence is not ungrammatical, because it is based on the speaker's representation of the addressee's situation. However, the addressee's reply will be ungrammatical¹⁶ if s/he doesn't correct the evidential. This is illustrated in (48) (from De Villiers et al. (2009:35)), in which the following context holds: speaker A rings speaker B at home to ask if Tashi is there. Speaker A assumes that B will only have indirect evidence of this fact, but B is sat opposite Tashi during the call.

¹⁵Littell et al. (2010:94) note that evidentials in Salish languages seem to weaken the interrogative force of the question containing them. This seems to be true of the adverbs discussed here too; (47) is primarily concerned with whether or not the speaker is definite, rather than whether Margarita went to the party. This suggests that the speaker predicts a certain response from the particular addressee on the level of the proposition contained in the answer, further suggesting that the speaker is interested in the addressee's understanding when asking the question.

¹⁶De Villiers et al. (2009:35) report that if a speaker uses the wrong evidential for the evidence which s/he has, this is judged as a grammatical violation, not just pragmatic infelicity.

- (48) A. Bkra-shis nang-la yod-sa-red_B pas?
 Tashi in COP.INDIRECT.EVID Q
 'Is Tashi in (can you tell)?'
 B. *Nang-la yod-sa-red_B
 In COP.INDIRECT.EVID
 'She is in (I can infer)'
 B'. Nang-la dug_B
 In EVID(DIRECT)
 'She is in (I can see her)'

Note that no (other) coordinates shift, and the addressee's coordinates do not in any way subsume those of the speaker. This is evident because the orientation of indexical pronouns is the same in questions as in statements. It is accounted for because the shift is not related to personhood or indexicality, but to how the type of SA head used subcategorises for the logophoric centre.

However, logophoric pronouns conform to predictions as they do shift orientation in questions. The Chinese logophoric pronoun *ziji*, when not bound in the sentence, is thought to be bound by the speaker ((49) from Chen (2009:466)).

- (49) Zhe-ge mimi zhiyou ziji_{speaker} zhidao
 This-CL secret only self know
 'Only I (lit. *myself*) know this secret'

However, in questions, the 'default' interpretation of *ziji* shifts to the addressee ((50) from Pan (2001)).

- (50) Ziji_{addressee} wei-she-me bu qu ne?
 self why no go Q
 'Why don't you (lit: *yourself*) go?'

These facts show that the logophoric centre in questions shifts because the addressee's situation, as created by the speaker, is the one at issue.

6. Conclusion

This paper shows that orientation shifting in high adverbs is a systematic and consistent phenomenon. The data show that high adverbs orient to a syntactic representation of the SPEAKER in declarative clauses, and that illocutionary and evidential adverbs, as well as *definitely* and *perhaps*, shift in yes-no interrogatives to orient to the ADDRESSEE. The phenomenon also occurs in clauses embedded under verbs of communication in the cases of evidential adverbs and *definitely* and *perhaps*. These adverbs orient to the matrix subject ('speaker' of the embedded clause) in declarative embedded clauses and to the matrix object ('addressee') in interrogative embedded clauses. Illocutionary adverbs, in contrast, are root phenomena which can only shift in matrix clauses or in embedded root contexts.

The solution postulated rests on the analysis of orientation as a case of predication. The

adverb is predicated of a subject which is bound by a representation of a discourse participant. This solution is solid and elegant because it falls out of independently motivated principles such as the MDP and only postulates structure which has overt correlates across languages. It does not postulate features that are not empirically motivated, but instead focuses on structures and functional projections which have seen strong empirical support. Finally, it can potentially offer with further development a solution to the persistent problem in Minimalist syntax of spelling out the highest projections in a sentence without resorting to stipulative means.

There are several future directions for this research: the proposal must be extended to other clause types such as imperative clauses as well as to languages with grammaticalised means of expressing the moods and modalities of the high adverbs. The question of why certain adverbs are not available in questions, and how these adverbs constrain the answer-set available in the partition formed by questions must also be examined. The psychological reality of the theory proposed also requires testing in the domain of child language acquisition.

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Rebecca Woods

Department of Language and Linguistic Science, University of York

rlw523@york.ac.uk

<https://york.academia.edu/RebeccaWoods>

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