

The interrogative left periphery: How a clause becomes a question*

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Abstract This paper considers phenomena related to embedded interrogatives that do not fit the canonical profile of subordinate clauses. It focuses on restrictions on such noncanonical cases of subordination, here referred to as quasi-subordination, and makes the following claims. There are three points in the interrogative left periphery for building question meaning. The lowest point is CP, where interrogatives are differentiated semantically from declaratives. All embedding verbs that can take interrogative complements, can take CP_{+WH} . The highest point is SAP. When its head is specified SA_{ASK} , the question denoted by the interrogative becomes a request for information by the speaker, directed towards the addressee. This is the structure we find in matrix questions (and quotations). In between these two levels is what I call PerspectiveP. Its head $Persp_{CQ}$ introduces PRO, an individual for whom the interrogative CP_{+WH} is a potentially active question. That is, PRO is the perspectival center, the one from whose point of view the interrogative can be a request for information (signaled by the specification CQ for centered question). When PRO is bound by the speaker argument in the Speech Act Phrase, we get a matrix question; when PRO is bound by the subject of a matrix predicate we get quasi-subordination. Quasi-subordination is a hybrid between true subordination (with respect to pronominal interpretation, for example) and nonsubordination (with respect to intonation, for example). Restrictions on quasi-subordination are claimed to be regulated, in addition to standard selectional restrictions, by semantic compatibility between the implied ignorance of the individual who is the perspectival center of the question and the meaning of the embedding clause. Empirical support for this view of the interrogative left periphery comes from a range of phenomena from unrelated languages. While the idea of an articulated left periphery goes back to Rizzi (1997), the details of the present proposal

are new. The paper discusses several implications of this view of the interrogative left periphery, connecting the specific claims to similar proposals about other clause types and to developments in our understanding of how complement selection works.

Keywords: left periphery, Speech Act Phrase, perspectival center, interrogative meaning, selection, question particles, clause-typing, alternative questions, biased questions, intonation

1 The Fine Structure of the Interrogative Left Periphery

The claim: there are three points at the left periphery of interrogative clauses where question meaning is built up. In this section I provide empirical evidence for this three-way distinction. The data come from a range of languages that are not necessarily related, and as such, suggest that the claim should have universal import.

1.1 *Matrix vs. Subordinated Interrogatives*

We know that languages differ with respect to the form of interrogative clauses, depending on whether they are free-standing matrix clauses or whether they are complements of interrogative selecting predicates. I briefly go over these differences in three languages whose syntax has been well-studied in the literature: English, Hindi-Urdu and Japanese. I use polar questions as well as constituent/wh questions for illustration.

English matrix questions are characterized by the presence of matrix intonation, subject-aux inversion, and wh fronting. Subordinated questions are not pronounced with intonation typical of interrogatives, do not display inversion, have a dedicated wh complementizer for polar questions, and require wh fronting:

- (1) a. Will Mary leave?
- b. John knows whether/if Mary will leave.

- (2) a. Who will Sue see?
 b. John knows who Sue will see.

I use *matrix intonation* as a cover term for whatever is the appropriate prosodic contour for the particular interrogative type (wh, polar, or alternative question, for example) and the particular illocutionary act, be it the speech act associated with information-seeking questions, quiz-master questions or biased questions, or for a distinct speech act like requesting or ordering.¹ For most of this paper I focus on information-seeking questions, though in section 5 I briefly comment on the applicability of the present proposal beyond information seeking, involving interrogatives as well as other clause types.

Matrix interrogatives in Hindi-Urdu also involve a characteristic intonation associated with questioning and an optional polar question particle (PQP) *kya:*. The language has what looks like wh in-situ but may, in fact, involve TP-internal movement to a preverbal focus position. Subordinated interrogatives do not manifest the intonation associated with matrix interrogatives but the status of the wh is the same as in the matrix case, be it wh in-situ or TP-internal focus movement. Two other important notes. Hindi-Urdu allows simplex polar questions in matrix interrogatives but not in subordinated interrogatives, where by simplex I mean a polar question formed by the nucleus alone (*p?* as opposed to *p or not (p)?*). Hindi-Urdu also has a complementizer *ki*, equally compatible with declarative and interrogative complements, which I gloss as SUB (for subordinator), following the discussion of Hungarian *hogy* in Szabolcsi 2016:²

- (3) a. (kya:) anu ja:egi:?
 PQP Anu will.go
 ‘Will Anu go?’

b. ravi ja:nta: hai (ki) anu ja:egi: *(ya: nahĩ:)

Ravi knows SUB Anu will.go or not

‘Ravi knows whether Anu will go or not.’

(4) a. anu kis-se milegi:

Anu who-with will.meet

‘Who will Anu meet?’

b. ravi ja:nta: hai (ki) anu kis-se milegi:

Ravi knows SUB Anu who-with will.meet

‘Ravi knows who Anu will meet.’

Let us now consider Japanese, which also shows that the syntax of matrix and subordinate interrogatives are not identical. Japanese has *wh* in-situ and a Q-particle *ka/no* in matrix and subordinate interrogatives. Matrix interrogatives have a distinctive question intonation and only in the case of matrix clauses, the Q-particle can be dropped (Miyagawa 2012, among others):

(5) a. Mary-wa hon-o kai-masi-ta (ka)?

Mary-TOP book-ACC buy-POL-PST Q

‘Did Mary buy a book?’

b. Tanaka-kun-wa [Mary-ga hon-o kat-ta ka] sit-tei-mas-u.

Tanaka-HON-TOP Mary-NOM book-ACC buy-PST Q know-PROG-POL-PRS

‘Tanaka knows whether Mary bought a book.’

- (6) a. Mary-wa nani-o kai-masi-ta (ka)?
 Mary-TOP what-ACC buy-POL-PST Q
 ‘What did Mary buy?’
- b. Tanaka-kun-wa [Mary-ga nani-o kat-ta ka] sit-tei-mas-u.
 Tanaka-HON-TOP Mary-NOM what-ACC buy-PST Q know-PROG-POL-PRS
 ‘Tanaka knows what Mary bought.’

One could go on, but I think we can safely conclude that there is enough evidence to posit at least a two-way distinction in the syntax of interrogatives. Let us assume a basic clausal structure for subordinate interrogatives, $[CP_{+WH}]$, that differentiates them from subordinate declaratives, $[CP_{-WH}]$. Let us also assume a larger structure $[XP [CP_{+WH}]]$ for matrix interrogatives. XP has been called a ForceP by some (Rizzi 1997) and a Speech Act Phrase by some (Speas and Tenny 2003). The terms are often used interchangeably (see, for example, McCloskey 2006) and readers should feel free to do the same here.³ What is important for present purposes is that this larger structure is the locus for contextual coordinates like *speaker* and *addressee* and for the illocutionary force associated with the clause. In the next section I will probe these distinctions further and argue that, in fact, the grammar of natural language has three projections in the interrogative left periphery:⁴

- (7) $[SAP SA_{ASK} [PerspectiveP Persp_{CQ} [CP C_{+WH}]]]$

C_{+WH} and SA_{ASK} are familiar terms but their semantic/pragmatic content may be fleshed out somewhat differently than in earlier work. The middle projection, Perspective Phrase with a $Persp_{CQ}$ head, is new and will be elaborated upon in section 2. For now, take CQ to indicate a *centered question*. Centering in the context of interrogatives can be taken to imply the presence of an individual who is potentially interested in obtaining the information conveyed by the question nucleus, the core proposition in the interrogative.

But let us first see if the move to this more fine-grained interrogative left periphery can be motivated on empirical grounds.

1.2 *A Three-Way Distinction among Rogative Predicates*

A standard way of classifying embedding predicates rides on the distinction between predicates that are positively or negatively specified as taking interrogative complements. This leads to a three-way distinction between rogative predicates that can only take $[_{CP} C_{+WH}]$ complements, uninterrogative predicates that only take $[_{CP} C_{-WH}]$ complements, and responsive predicates that can take either.⁵ In this section I will argue that within the class of rogative predicates itself, a further three-way distinction is possible, separating those that in addition to taking $[_{CP} C_{+WH}]$, can take structures larger than CP, namely $[_{PerspectiveP} Persp_{CQ}]$, and a subset of those that can take structures even larger than that, namely $[_{SAP} SA_{ASK}]$. In order to do so, I introduce the phenomenon of embedded inversion discussed by Henry (1995) and McCloskey (2006).

McCloskey notes that rogative predicates differ from responsive predicates in allowing complements that have the syntactic and prosodic profile of matrix interrogatives.⁶ The symbol \uparrow stands for the standard matrix intonation associated with that interrogative type:⁷

- (8) a. I wondered [was he illiterate \uparrow].
b. I asked him [from what source could the reprisals come \uparrow].
- (9) a. *I knew [was he illiterate \uparrow].
b. *I told him [from what source could the reprisals come \uparrow].

These cases of embedded inversion have, in addition to the characteristic rise associated with matrix interrogatives, a slight pause before the embedded question. McCloskey shows convincingly that they are not quotations, drawing on the interpretation of pronouns and sequence of tense phenomena. Here I present his arguments based on the

interpretation of pronouns, with (10b) slightly modified to include the gender neutral singular *they*:

- (10) a. Everybody wants to know [did I_{SPEAKER} succeed in buying chocolate for Winifred↑].
- b. Every physicist_i wonders [will he_i/[they_i]_{AGENT} be awarded the Nobel prize↑].

The 1st person pronoun in (10a) refers to the individual who is the speaker in the context of utterance rather than an argument of the matrix clause. This is typical of subordinated clauses, not of quotations. Similarly, the 3rd person singular pronoun in (10b) can be bound by the matrix subject, again unlike such pronouns in quotations.

I should add that even though the original claim about embedded inversion was made for Irish English, it is quite pervasive in the grammar of English. Often speakers who show an initial resistance to these contrasts are on board with a relative difference between (8) and (9), and with some exposure, have further intuitions in keeping with McCloskey's claims for Irish English. What I have to say could, of course, be evaluated on its merits even if it were based only on a subset of English dialects, but I believe that it is representative of English grammar more generally.⁸

While McCloskey presents the contrast between rogatives and responsives in the acceptance or rejection of embedded inversion in interrogative complements, I would like to point out that there is a (very) small subset of rogative predicates that do not take embedded inversion: *depend on*, *be up to*, *investigate*, and *look into* are examples of such rogatives. A comparison of (11) with (12), then, suggests that a cut among rogative predicates with respect to the selection of embedded inversion is needed:

- (11) a. The question is [whether Mary will leave]/[who Mary will see].
- b. The question is, [will Mary leave↑]/[who will Mary see↑]

- (12) a. [Whether Mary will leave]/[Who Mary will see] depends on/is up to Sue.
 b. * [Will Mary leave↑]/*[Who will Mary see↑] depends on/is up to Sue.

We can make another cut among rogative predicates by considering declarative questions, initially discussed by Gunlogson (2004, 2008) and Büring and Gunlogson (2000), and by many others since then. Compare the canonical version of a polar question in (13a) with its noncanonical declarative version in (13b):

- (13) a. Is it raining outside↑
 b. It's raining outside↑

Deferring discussion of how rising intonation and declarative syntax interact to section 4, I note the well-established fact that a rising interrogative can be a neutral question while a rising declarative is necessarily a biased question: (13b) is only felicitous in contexts where there is some reason for the speaker to think that the nucleus proposition holds. Relevant to our present concerns, Gunlogson as well as McCloskey note that declarative questions cannot embed, even under predicates that otherwise allow embedded inversion:

- (14) a. The question is, [is it raining↑]/*[it's raining↑]
 b. She wondered, [did he have a haircut↑]/*[he had a haircut↑]

Such questions can, however, be embedded as quotations. *Ask* is a predicate that selects for interrogative quotations, not declarative quotations (Grimshaw 2012). That is, it is a rogative with respect to quotations, unlike *say*, for example:

- (15) a. She said/asked, “Is it raining↑” *quoted interrogative question*
 b. She said/*asked, “It's raining↓” *quoted declarative assertion*
 c. She said/asked, “It's raining↑” *quoted declarative question*

This shows that declarative questions are genuine questions that can satisfy rogative selectional requirements, and further, that they can only embed as quotations.

Based on the above, then, we can distinguish three classes of rogative predicates in English. The first class (*depend on, be up to, investigate, look into*) obligatorily take interrogative complements with subordinate profile. The second class (*wonder, the question is*) can take complements with subordinate or matrix profile but not declarative questions. The third (*ask*) can take the full complement of question types, including declarative questions, but this last only as quotations.⁹ We can classify these three types of rogatives as selecting for [CP C_{+WH}], [PerspectiveP Persp_{CQ} [CP C_{+WH}]] or [SAP SA_{ASK} [PerspectiveP Persp_{CQ} [CP C_{+WH}]]]. It will be useful to adopt the term *quasi-subordination* from Dayal and Grimshaw (2009) for the intermediate type of embedding.¹⁰

1.3 A Three-Way Distinction among Interrogative Particles

I now turn to the second set of considerations, having to do with interrogative particles in a variety of languages. A close look at them argues for a similar three-way distinction in the interrogative left periphery.

We can start with the most familiar case, namely Japanese Q-morphemes. We already saw them in section 1.1 but here we zoom in on the correlation between their presence in subordinated positions and clause-type. There are several such particles but we will focus on *ka*, which occurs in interrogatives, and *koto*, which occurs in declaratives. Having *ka* in the embedded clause is sufficient to achieve an embedded question interpretation. That is, we can think of it as a particle that does clause-typing, in the sense of Cheng 1991:

- (16) a. Tanaka-kun-wa [Mary-ga hon-o kat-ta ka/koto]
 Tanaka-HON-TOP Mary-NOM book-ACC buy-PST Q COMP
 sit-tei-mas-u.
 know-PROG-POL-PRS
 ‘Tanaka knows whether Mary bought a book.’

- b. Tanaka-kun-wa [Mary-ga nani-o kat-ta *(ka)]
 Tanaka-HON-TOP Mary-NOM what-ACC buy-PST Q
 sit-tei-mas-u.
 know-PROG-POL-PRS
 ‘Tanaka knows what Mary bought.’

In contrast to Japanese *ka*, the Hindi-Urdu particle *kya*: ‘what’ appears only in polar questions and is optional. In Bhatt and Dayal 2014, 2020 we argue against its characterization as a clause-typing particle, as proposed in Cheng 1991, by pointing to the following:

- (17) a. ravi ja:nta: hai ki anu ja:egi:
 Ravi knows SUB Anu will.go
 ‘Ravi knows that Anu will go.’
- b. ravi ja:nta: hai ki kya: anu ja:egi:
 Ravi knows SUB PQP Anu will.go
 Intended: ‘Ravi knows whether Anu will go.’

Our point is that an embedding predicate that could take either $[C_{+WH}]$ or $[C_{-WH}]$ would be the ideal predicate to require a clause-typing particle in the embedded clause. However, *kya*: is simply ungrammatical in (17b). We further note that its distribution closely tracks that of English embedded inversion. In addition to *kya*: being unacceptable with a responsive predicate like *ja:n-na*: ‘know’ (17b), it is acceptable with *pu:ch-na*: ‘ask’ (18a), *sava:l yeh hai* ‘the question is this’ (18b), but not with *nirbhar kar-na*: ‘depend on’ (18c). We dub *kya*: a Polar Question Particle (PQP), as opposed to a Q-particle that does clause-typing:

- (18) a. Ti:char-ne anu-se pu:cha: ki kya: vo ca:i piyegi:
 teacher-ERG Anu-INS asked SUB PQP she tea will.drink
 ‘The teacher asked Anu if she will drink tea.’
- b. sava:l yeh hai ki kya: nayi: vyavastha: ka:gar sa:bit hogi:
 question this is SUB PQP new arrangement effective prove will.be
 ‘The question is whether the new arrangement will prove effective.’
- c. *kya: vo ja:egi: ya: nahī: uske mu:D par nirbhar karta: hai
 PQP she will.go or not her mood on depend does
 ‘Whether she will go or not depends on her mood.’

We also mention several other candidates for PQP status, most notably Mandarin *ma* (but see Song 2018).

To return to the claim of a three-way contrast, a final type of interrogative particle worth looking at belongs to the class of what I call Meta Question Particle (MQP). These are particles that can only occur in matrix clauses or quotations. Consider the English adverb *quick/quickly* mentioned in Dayal 2016 and the Japanese particle *kke* analyzed by Sauerland and Yatsushiro (2017):

- (19) a. *Quick/quickly*, where did you hide the matza?
- b. Namae-wa nan da-kke (ka)?
 name-TOP what COP-KKE Q
 ‘What is your name, again?’

Quick and *quickly* in matrix questions like (19a) signal to the addressee to answer the question without delay. *Quick* turns out to be ungrammatical in embedded position (20a), while *quickly* can only modify the manner of asking, not the speed with which Mary wanted Sue to answer. In (19b) *kke* has what Sauerland and Yatsushiro call a *remind-me*

presupposition. They provide (20b) to show its unembeddability, and I have added (20c) to provide a minimal pair to make the same point:¹¹

(20) a. Mary asked Sue *quick/quickly where she hid the matza.

where did she hide the matza↑

b. *Doko-ni simatta-kke siri-tai desu?

where-LOC put.away-KKE know-want COP

Intended: ‘[I] want to know — where did [I] put [the keys], again?’

c. *Boku-wa [(kimi-no) namae-ga nan-da-kke (ka)] siri-tai.

I-TOP you-GEN name-NOM what-COP-KKE Q know-want

Intended: ‘[I used to know but now I’ve forgotten, so] I want to know your name, please remind me.’

Crosslinguistically, then, we can say that there are interrogative particles that are obligatory in all subordinated interrogatives (Japanese *ka*), polar interrogative particles that occur in matrix and quasi-subordinated interrogatives (Hindi-Urdu *kya:*), and interrogative particles that only occur in matrix interrogatives and quotations (Japanese *kke*, English *quick*). This I take to be evidence that the three types of particles occur at different points in the interrogative left periphery.

1.4 Section Summary

I have provided empirical evidence for three points in the left periphery of interrogative clauses. The structure below shows this, with the different phenomena discussed here aligned with the part of the left periphery where I take them to be located:

[_{SAP} SA _{ASK}	[_{PerspectiveP} Persp _{CQ}	[_{CP} C ⁰ _{+WH}	[_{TP} ...]]]]
MQP, Bias-Q	inversion, PQP	Q-particles/ <i>whether</i>	nucleus
↑ _{MATRIX}	↑ _{MATRIX}	wh fronting	

The next step is to flesh out the semantics and pragmatics of these three points of the interrogative left periphery.

2 Becoming a Question

The goal of this section is to explain the empirical generalizations from section 1 regarding the core difference between rogative and responsive predicates with respect to quasi-subordination. I start by laying out the basic proposal in section 2.1. I provide the theoretical underpinning for crucial features of the proposal in section 2.2. I will further discuss the interrogative left periphery in section 3, where I will address a revised generalization about the (im)possibility of quasi-subordination under responsive predicates.

2.1 *What Happens Where at the Left Periphery*

In this section I articulate the semantic and pragmatic details of the interrogative left periphery, locating clause-typing at C_{+WH} , centering at $Persp_{CQ}$, and the illocutionary act of asking at SA_{ASK} . Clause-typing, centering, and speech acts will be discussed further in section 2.2, where these concepts will be connected to related ideas in the literature.

2.1.1 *What Happens at C_{+WH}* In order to ground the current proposal I will begin by introducing a particular approach to the syntax and semantics of questions, generally known as the Hamblin-Karttunen approach.¹² Hamblin (1973), responding to criticisms that truth conditional semantics does not apply to nondeclaratives, claimed that question meaning could be defined in terms of a set of possible answers, each possible answer a proposition. Karttunen (1977), building on this proposal, added the condition that questions should denote the set of *true* propositions. This modification was based on the observation that verbs like *tell*, which are nonfactive when they embed declaratives, seem

to become factive when they embed interrogatives. This truth requirement was subsequently shifted to a separate answerhood operator (Dayal 1993, 1996).

Current iterations that go under the label of the Hamblin-Karttunen approach follow Karttunen in treating the wh phrase as an indefinite generalized quantifier that moves to Spec CP, leaving a trace or a copy in its base position, and in taking the C_{+WH} node to shift the meaning of the clause from the level of a proposition (type $\langle s, t \rangle$) to the level of a set of propositions (type $\langle \langle s, t \rangle, t \rangle$). The wh expression, when quantified in, binds the variable denoted by the trace in base position. We can use a simple English question to illustrate these steps:¹³

- (21) a. $[[_{CP} \text{who}_i [_{C'} C_{+WH} [_{TP} \text{Sue saw } t_i]]]]$
- b. $[[[_{TP} \text{Sue saw } t_i]]] = \wedge \text{sue saw } x_i$ *question nucleus: a proposition*
- c. $[[C_{+WH}] = \lambda q \lambda p [p = q]$ *shift from type $\langle s, t \rangle$ to type $\langle \langle s, t \rangle, t \rangle$*
- d. $[[[_{C'} C_{+WH} [_{TP} \text{Sue saw } t_i]]]] =$
 $[[C_{+WH}]([_{TP})]$ *set of propositions p, where p*
 $\Rightarrow \lambda p [p = \wedge \text{sue saw } x_i]$ *is identical to the nucleus*
- e. $[[[_{CP} \text{who}_i [_{C'} C_{+WH} [_{TP} \text{Sue saw } t_i]]]]] =$
 $\lambda p \exists x [\text{human}(x) \wedge p = \wedge \text{sue saw } x_i]$ *quantifying in the indefinite & binding*
 $\Rightarrow \{\text{Sue saw Mary,}$ *the free variable: a nonsingleton set*
 Sue saw Bill,
 $\text{Sue saw Jim}\}$

The Hamblin-Karttunen approach to questions is called after *Hamblin* because it denotes the set of possible answers, and after *Karttunen* because of the shift to a propositional set at C_{+WH} , followed by quantifying in an indefinite generalized quantifier. The final piece involves the inclusion of the truth requirement in an answerhood operator.¹⁴ We adopt the one from Dayal (1996) to capture this aspect of the theory:¹⁵

(22) Ans-D: $\lambda Q \text{ up } [Q(p) \wedge \checkmark p]$

This operator applies to a set of propositions Q in a given world, and picks out a unique proposition p in the set that is true at that world. If there is no such unique true proposition, the operator is undefined and the question is judged infelicitous.

Let us now focus on a polar question where the difference between declaratives and interrogatives is smaller. The key distinction for us is that an interrogative denotes a set of propositions while a declarative denotes a proposition. This shift occurs at the level of C_{+WH} , analogously to what we saw in (21):

- (23) a. $\llbracket C_{+WH} \rrbracket = \lambda q \lambda p [p = q]$
 b. $\llbracket [TP \text{ Sue will leave}] \rrbracket = \wedge_{\text{sue will leave}}$
 c. $\llbracket [CP \text{ whether Sue will leave}] \rrbracket = \{\wedge_{\text{sue will leave}}\}$
 $\Rightarrow \{\wedge_{\text{sue will leave}}, \wedge_{\neg \text{sue will leave}}\}$

I am following here the view of Bolinger (1978) and others in the recent literature that takes the basic meaning of a polar question to be a singleton propositional set, which then gets coerced into a plural propositional set. We will return to this issue in section 4.

Assigning the meaning $\lambda q \lambda p [p = q]$ to C_{+WH} is tantamount to considering it a clause-typing expression and can be used to explain the basic generalization regarding the embeddability of declaratives vs. interrogatives. Embedding predicates select for C_{+WH} , C_{-WH} , or are underspecified for the $\pm WH$ feature on the complement. This leads to the following distributional generalization:

- (24) a. Mary \checkmark wonders/*believes/ \checkmark knows [whether Sue will leave/who Sue will meet].
 b. Mary *wonders/ \checkmark believes/ \checkmark knows [that Sue will leave/that Sue will meet Bill].

Japanese clauses with *ka*, discussed in section 1.3, have the same profile as the interrogative complements in (24a) with respect to embeddability. As such, Japanese *ka* can be safely classified as the overt realization of the clause-typing C_{+WH} head of CP.

2.1.2 *What Happens at Persp_{CQ}* I have posited an intermediate step in the derivation of a direct question, PerspectiveP. Its head, Persp_{CQ} has a trivial semantics, being a simple identity function from question denotations to question denotations. However, there are two crucial ways in which it contributes to meaning. One, it introduces a null argument from whose perspective the question is potentially active. Two, this contribution is not-at-issue content, in the sense of Potts 2004.¹⁶ This is represented (25b) by placing the contribution of the Persp_{CQ} head between the colon and the period. That is, one can think of the requirement introduced by Persp_{CQ} as a presupposition that must be satisfied for the question to be felicitous:

- (25) a. [_{PerspectiveP} PRO [_{Perspective'} Persp_{CQ} [_{CP_{+WH}} will Sue leave]]]
 b. [[Persp_{CQ}] = $\lambda Q \lambda x$: Q is P(potentially)-ACTIVE for x. Q
 c. $\forall x \forall Q$ [P-ACTIVE-for(Q, x) $\rightarrow \diamond \neg$ know(x, Ans(Q))]

PerspectiveP is never an actual question, its PRO argument is an anaphoric pronoun that needs to be bound by either the speaker in the context (in the case of a matrix question), or by an argument of the matrix clause (in the case of quasi-subordination). A minimal requirement for a question to be potentially active for someone is the individual's ignorance about the answer to it. This is shown in (25c), where a question that is potentially active for an individual entails ignorance on the part of that individual about the answer to the question, at least as far as common ground knowledge is concerned. We will probe the notion of a potentially active question further in section 3.2 but let us see what the requirement in terms of ignorance buys us.

Recall the distinction between rogative and responsive predicates with respect to embedded inversion. We can now explain it as an effect of the proposed not-at-issue condition. We see below that the requirement of possible ignorance on the part of PRO contributed by Persp_{CQ} is compatible with the lexical semantics of rogative predicates but not of responsive predicates:

(26) a. $[\text{SAP SA}_{\text{ASSERT}} [\text{CP } \text{Mary}_i \text{ asked/*knew}$
 $[\text{PerspectiveP } [\text{PRO}_i [\text{Persp}_{\text{CQ}} [\text{CP}_{+\text{WH}} \text{ will Sue leave}]]]]]]]$

b. $[[\text{PerspectiveP}]] = \text{P-ACTIVE}(\{^{\wedge}\text{sue will leave}, ^{\wedge}\neg\text{sue will leave}\}, x_i)$.
 $\{^{\wedge}\text{sue will leave}, ^{\wedge}\neg\text{sue will leave}\}$

c. $[[\text{Mary asked will Sue leave}]] =$
 The question *will Sue leave?* was potentially ACTIVE for Mary;
 Speaker_C makes public their commitment to the proposition:
 Mary wanted to know the answer to the question *will Sue leave?*

d. $[[\text{Mary knew will Sue leave}]] =$
 The question *will Sue leave?* was potentially ACTIVE for Mary;
 Speaker_C makes public their commitment to the proposition:
 Mary knew the answer to the question *will Sue leave?*

The acceptability/unacceptability of (26a) rests on whether the not-at-issue condition $\diamond\neg\text{know}(\text{mary}, \text{Ans}(\text{will sue leave?}))$ is consistent with Mary being in the *ask/know* relation to the embedded Q. In the case of *ask* we have a consistent meaning, as seen in (26c). In the case of *know* we end up with a contradiction, as seen in (26d). The speaker cannot presuppose that Mary may have been interested in knowing the answer to the question *will Sue leave* and simultaneously assert that she knew the answer to the question.

The distribution of Hindi-Urdu *kya:*, because it is parallel to embedded inversion in English, can be explained along the same lines. It occurs in PerspectiveP, whose Persp_{CQ}

head is licensed if the requirement of possible ignorance on the part of PRO is compatible with the lexical semantics of the embedding predicate.¹⁷

On the view just sketched, PRO in Spec of PerspectiveP represents the perspectival center, the individual from whose point of view the interrogative is a question. That is, PerspectiveP is a centered question.

2.1.3 What Happens at SA_{ASK} We have seen how a PerspectiveP with Persp_{CQ} head can be interpreted compositionally in quasi-subordination. Let us now see what happens when it occurs in a matrix clause. I follow what is by now a well-established view that coordinates for the speaker and addressee in the context of evaluation are syntactically represented at the highest level of the left periphery (Speas and Tenny 2003, a.o.). I will also follow a semantics for the Speech Act Phrase in terms of discourse moves by the speaker, typically involving the addressee (Szabolcsi 1982, Krifka 2014, a.o.). Note that this move too is not-at-issue content:

- (27) a. $[_{SAP} \text{Speaker}_{C-i} [_{SA'} \text{Addressee}_C [_{SA'} \text{SA}_{ASK} \text{PerspectiveP PRO}_i [_{Persp'} \text{Persp}_{CQ} [_{CP} C^0_{+WH} [TP]]]]]]]]$
- b. $[[SA_{ASK}] = \lambda Q_{\langle \langle s, t \rangle, t \rangle} \lambda x \lambda y: y \text{ puts } x \text{ under obligation to ASSERT(Ans(Q)). } Q$
- c. $[[SAP]] = \text{Speaker}_C \text{ puts addressee}_C \text{ under obligation to ASSERT(Ans(Q)). } Q$

The binding of PRO in Spec of PerspectiveP by the speaker coordinate of SAP brings in the requirement of possible ignorance on the part of the speaker. This is consistent with the request by the speaker for the addressee to provide the information at SAP. In the example we have been using as illustration, the full structure has a consistent interpretation:

- (28) a. $[_{SAP} \text{Speaker}_{C-i} [_{SA'} \text{Addressee}_C [_{SA'} \text{SA}_{ASK} \text{PerspectiveP PRO}_i [_{Persp'} \text{Persp}_{CQ} [_{CP} C^0_{+WH} [TP]]]]]]]]$

- b. $\llbracket(28a)\rrbracket =$ The question *will Sue leave?* is potentially ACTIVE for Speaker_C;
 Speaker_C puts addressee_C under obligation to answer the question
will Sue leave?

Additionally, we can now explain the behavior of MQPs as modifiers of the speech act. For example, *quick* modifies the illocutionary force in the following way:

- (29) a. **Quick/quickly**, where did you hide the matza↑
 b. $\llbracket\text{quick SA}_{\text{ASK}}\rrbracket =$
 $\lambda Q_{\langle\langle s,t \rangle, t \rangle} \lambda x \lambda y: y$ puts x under obligation to quickly(ASSERT(Ans(Q))). Q
 c. Speaker_C puts Addressee_C under obligation to **quickly(ASSERT(Ans(Q)))**. Q

The role of other MQPs discussed in section 1.3 can be similarly handled by applying regular modifier meanings to the speech act of requesting information. The meaning of Japanese *kke*, for example, would be something like: $\lambda Q_{\langle\langle s,t \rangle, t \rangle} \lambda x \lambda y: y$ puts x under obligation to AGAIN(ASSERT(Ans(Q))), where the operation AGAIN can be defined along the lines of von Stechow 1996.¹⁸

The restriction of MQPs to matrix questions/quotations is predicted if SAPs do not embed, except as quotations. Evidence for this will be provided in section 4.

2.2 On Clause-Typing, Centering, and the Act of Asking a Question

I will now try to contextualize the claims made regarding the incremental way in which a proposition denoting TP expands into a question, either as a subordinated CP, a quasi-subordinated PerspectiveP or a free standing/quoted SAP.

2.2.1 Clause-Typing

Cheng (1991), partially inspired by Baker (1970), argued that every language must distinguish between clause-types at S-structure: “every clause needs to be typed. In the case of typing a wh-question, either a wh-particle in C⁰ is used or else

fronting of a wh-word to the Spec of C^0 is used, thereby typing a clause through C^0 by spec-head agreement” (Cheng 1991:29). Whether one accepts the details of Cheng’s hypothesis about clausal typing or not, one can still take it as a descriptively adequate generalization that CP is the point in the structure where declaratives and interrogatives must be distinguished.

The semantic reflex of the clausal typing hypothesis can be fleshed out in the following way: a declarative is a proposition (type $\langle s, t \rangle$), an interrogative is a set of propositions (type $\langle \langle s, t \rangle, t \rangle$). This separation happens at C^0 in the Hamblin-Karttunen approach to questions. The proposal in section 2.1, taking clause-typing to be the first step in building question meaning, is in keeping with this approach to question semantics.

One advantage of the clause-typing hypothesis is that it provides a simple explanation for separating out three classes of embedding predicates, those that must embed interrogatives, those that cannot embed interrogatives, and those that can do so optionally. These predicates can then be classified in terms of selecting or not selecting C_{+WH} . Subordination is acceptable if the selectional properties of the predicate match the clause-type of the complement:

- (30) a. Mary believes [**whether/✓that Sue will leave*].
 b. [*✓Whether/*That Sue will leave*] depends on Mary.
 c. $\llbracket [TP [CP \textit{whether sue will leave}] \textit{depends on Mary}] \rrbracket =$
 $\wedge \textit{depend-on}(m)(\textit{Ans-D}(\{\wedge \textit{sue will leave}, \wedge \neg \textit{sue will leave}\}))$

Assuming that *belief* is a relation that applies to propositions, once a clause denotes a set of propositions, it can no longer be an acceptable argument for it.¹⁹ By the same token, taking predicates like *depend on* to be relations to sets of propositions explains why a clause that denotes a proposition is not an acceptable complement. If embedding minimally requires a CP complement, putting clause-typing low in the left periphery

explains such selectional differences. It also explains the obligatoriness of genuine Q-morphemes, such as Japanese *ka/no* in all embedded interrogatives, as shown by the contrasts in (16).

To sum up this point, nothing that I have said about the syntax or semantics of C^0 is novel and, to that extent, nothing about it is particularly controversial. This is not to say that there are no alternative viewpoints on this issue. We know, for example, that there are theories that do not differentiate between declarative and interrogative meanings in terms of semantic type (Groenendijk and Stokhof 1984, Groenendijk and Roelofsen 2009, among others). The claim of clause-typing at the lowest point in the left periphery should be translatable into such frameworks with appropriate adjustments. The important point is that from the perspective of the current proposal, clause-typing is to be taken as ensuring that $[[CP_{+WH}]] = [[CP_{-WH}]]$, where CP_{+WH} is syntactically an interrogative and CP_{-WH} is syntactically a declarative, and that this is the first step in the building up of question meaning.

2.2.2 Centering Before we discuss the notion of centering as it relates to questions, it is worth noting that the features of PerspectiveP and SAP, unlike the features on C^0 are not binary in nature. For example, we have seen $Persp_{CQ}$ (centered question) so far and we will discuss $Persp_{CP}$ (centered proposition) below, and $Persp_{CI}$ (centered imperative) in section 5. Similarly, the head of SAP may be SA_{ASK} , SA_{ASSERT} , SA_{DIRECT} or any other illocutionary act. One could characterize the features on C^0 as semantic, the features on PerspectiveP and SAP as pragmatic in nature.

Centering is a well-established concept but it has primarily been discussed in relation to propositions. In its simplest form it allows for the possibility that an embedding predicate may relate not just to a set of worlds, but to a set of centered worlds. That is, the relationship between a predicate and its propositional complement can be mediated via an

individual. This individual is the perspectival center, the one whose point of view provides the critical lens through which to connect to the proposition. To familiarize the reader, I will briefly introduce two phenomena for which the idea of a centered proposition has been invoked, attitudes *de se* and predicates of personal taste. I should say at the outset that my discussion here is too brief to be a responsible overview of either phenomenon but is nevertheless useful in pointing to antecedents for the claim of centered questions made in section 2.1.2.

A particularly nice illustration of *de se* readings is provided by the following paradigm from Chierchia (1989:24–25) regarding the interpretation of the nonreflexive pronoun *suoi* and the long-distance reflexive pronoun *propri* in Italian:

- (31) a. Pavarotti crede che i *suoi/propri* pantaloni siano in fiamme.
 Pavarotti believes that the his self’s pants are on fire
 ‘Pavarotti_i believes that his_i pants are on fire.’
- b. Ma non si e’ accorto che i pantaloni sonon i propri.
 ‘But he hasn’t realized that the pants are his own.’

If (31a) uses *suoi* it can be followed by (31b) without contradiction but not if it uses *proprio*. That is, *proprio* obligatorily has a *de se* reading where the matrix subject has to self-ascribe the relevant property: λx [x’s pants are on fire]. The important point from the perspective of the present proposal is the possibility of capturing the *de se* reading by positing a PRO in the complement, an individual variable that can be abstracted over and bound by the matrix subject.

The second phenomenon where we find a similar appeal to an individual variable in the complement is with predicates of personal taste, discussed by Lasnik (2005) and Stephenson (2007, 2010), among others:

- (32) a. Speaker A: This pie is vegan/tasty_A.
 Speaker B: This pie is not vegan/tasty_B.
- b. Speaker A: This pie is vegan/tasty_A.
 Speaker B: I don't agree.
 (= This pie is not tasty; ≠ This pie is not tasty to A)

In the dialogue in (32a), if A and B differ on whether the pie is vegan, they can check on the ingredients and the matter can be settled objectively. If they differ on the taste of the pie, things are complicated because we are now dealing with an inherently subjective matter. Speaker A and Speaker B are both right even though they hold opposing views. One could say that in each case the predicate *tasty* is anchored to an individual, a perspectival center from whose point of view the pie is or is not tasty. As (32b) shows, this subjective aspect of the statement cannot be directly challenged. Speaker B would have to say something like *I don't believe you really find it tasty, you are just being polite* if they wanted to challenge Speaker A's role as the center.

Let us see how this relates to the issue of centered questions that I argued for in section 2.1.2. Consider the difference between the unembedded and the embedded versions in (33a) and (33b):

- (33) a. This pie is tasty_{Speaker_C}.
 b. Mary thinks [this pie is tasty_{Mary}].
 c. [PRO_i [this pie is tasty_{center-i}]]

While the center in the first case is the speaker in the context, the center in the second case is the matrix subject. One can capture this variation by positing a PRO in clauses with such predicates, as in (33c), and have it bound by the closest c-commanding argument, the speaker in unembedded clauses or the matrix subject in embedded clauses.

There are many complexities regarding predicates of personal taste that I have abstracted away from. My goal here was to emphasize two points. This phenomenon provides independent evidence of a PRO argument in complement position that can be bound from outside, in both embedded and unembedded contexts. The role of the perspectival center is part of the not-at-issue content, not part of the directly challengeable proffered content. These are also two novel aspects of my proposal about centered questions at PerspectiveP.

2.2.3 *The Illocutionary Act of Asking* Ross (1970) proposed that every clause has a performative layer at the top, where the illocutionary act is represented. This is shown below with the strike through indicating the covert illocutionary part of the structure:

- (34) a. [~~Speaker asserts~~ [It is raining.]]
b. [~~Speaker asks~~ [Is it raining?]]

The Performative Hypothesis fell out of favor, one reason being that it was deemed semantically problematic. Any utterance of (34a), for example, is bound to be true regardless of the state of the weather. Similarly, an utterance of (34b) is a necessarily true assertion rather than a request for information.

The problem, however, surfaces only if the performative layer is interpreted compositionally at par with its prejacent. What is needed is a distinction between the “function indicating device” and the “proposition indicating device,” to draw on the terminology in Searle 1964. Whether a proposition can be felicitously asserted or an interrogative felicitously used for asking depends on whether the preparatory conditions for the particular illocutionary act can be satisfied in the context. The felicity conditions for questioning, for example, require the speaker to be ignorant about the nucleus proposition, to be desirous of gaining that information, and to hold the belief that the

addressee has the relevant knowledge. This view of the illocutionary act can be incorporated in a grammar which includes at-issue and not-at-issue components, where the interaction between the two dimensions has some built in buffers. The semantic objections to the Performative Hypothesis thus do not apply to current versions that posit an SAP (or ForceP) projection for the illocutionary act.

One point of clarification. Though the semantics I have given for SAP_{ASK} draws on insights in [Krifka 2014](#), I depart from him in claiming that SAPs do not embed, except as quotations. This is critical in explaining why MQPs never occur in (quasi-)subordinated structures. We will return to arguments against the embeddability of SAPs in section 4.

2.3 Section Summary

I built on the view that there is a fundamental syntactic and semantic distinction between a declarative and an interrogative. They differ syntactically in having a WH feature that can be positive or negative, and this corresponds to a difference in semantic type. This is what I believe has been called clause-typing in the literature. I have argued for the possibility of a structure above CP, namely PerspectiveP, whose head introduces a perspectival center. In the case of interrogatives this requires, at a minimum, potential ignorance about the nucleus proposition on the part of the individual who is the center. The next higher projection is SAP, where the illocutionary relation is articulated and anchored to the speaker and addressee in the context. CP and PerspectiveP can be subordinated and quasi-subordinated respectively, but SAP can only be embedded as quotation. One can, if one wants, think of the CP as completing the basic semantic profile of an interrogative and PerspectiveP and SAP as elaborating on its pragmatic profile.

3 (Quasi-)subordination & Shifty Responsives

I presented the generalization that embedded inversion is possible under rogative predicates but not under responsive predicates in section 1. I also introduced a caveat to the first half of the generalization, namely that not all rogative predicates take embedded inversion. Here I probe the second half of the generalization, that responsive predicates do not allow embedded inversion, and note that there are conditions under which responsive predicates can, in fact, do so. I show how this is predicted by the proposal in section 2. In doing so, I point to a possible elaboration of the account.

3.1 *The Hybrid Character of Quasi-subordination*

I begin by reviewing the status of the three kinds of structures that are involved in embedding. The interpretation of pronouns in English reveals a clear difference between subordinated clauses and quotations. We show this schematically with interrogatives, reproducing the arguments made by McCloskey (2006):

- (35) a. [_{SAP} Speaker_C Addressee_C ASSERT [_{CP} Mary [_{VP} asked
[_{CP+WH} whether she/I/you should leave]]]].
- b. [_{SAP} Speaker_C Addressee_C ASSERT [_{CP} Mary [_{VP} asked,
“[_{SAP} should she/I/you leave↑]”]]]

In the subordinated structure in (35a), the 3rd person pronoun can be coindexed with the matrix subject *Mary* (or with someone other than the speaker or addressee), the 1st person pronoun with the speaker in the context, and the 2nd person with the addressee in the context. In the quotation in (35b), the third person pronoun cannot be coindexed with the matrix subject, *Mary*. The first person pronoun is coindexed with *Mary* and the second person pronoun with the understood indirect object of the matrix clause.²⁰ Furthermore, the embedded question has matrix intonation and subject-aux inversion.

The quasi-subordinated structure shows its hybrid character:

- (36) [_{SAP} Speaker_C Addressee_C ASSERT [_{CP} Mary [_{VP} asked
[_{PerspectiveP} should she/I/you leave↑]]]]

The interpretation of pronouns in (36) aligns quasi-subordination with subordination (35a), while intonation and inversion align it with quotations and matrix clauses (35b).

The same point can be made by considering cases of bound variable pronouns (McCloskey 2006):

- (37) a. Everyone wants to know [did I succeed in buying chocolate for Winifred↑].
b. Every physicist wonders [will he/they be awarded the Nobel prize↑].

Example (37a) with a first person pronoun does not have a bound variable interpretation while (37b) with a third person singular does. With this background in place, let us return to the generalization that responsive predicates do not take quasi-subordinated questions.

3.2 *The Shiftiness of Responsive Predicates*

Recall the rogative/responsive difference involving English embedded inversion and Hindi-Urdu PQP, which was explained by the requirement of possible ignorance on the part of the matrix subject:

- (38) a. Everybody wants to know [did I succeed in buying chocolate for Winifred↑].
b. *Everybody knows [did I succeed in buying chocolate for Winifred↑].

- (39) a. anu ja:nna: ca:hti: hai [ki (kya:) tum cai piyoge↑]
Anu to.know wants SUB PQP you tea will.drink
'Anu wants to know whether you'll drink tea.'

b. *anu ja:nti: hai [ki (kya:) tum cai piyoge(↑)]

Anu knows SUB PQP you tea will.drink

Intended: 'Anu knows whether you'll drink tea.'

It turns out, however, that the ban on responsive predicates is not absolute. McCloskey notes that when the matrix predicate is negated or questioned the unacceptability disappears, as shown below:

(40) a. *I remember [was Henry a communist↑]

b. ?I don't remember [was Henry a communist↑]

c. Do you remember↑ [was Henry a communist↑] *McCloskey 2006:112*

Let us call this seemingly puzzling switch in judgments the shiftiness of responsive predicates.²¹ Again, this shiftiness may hold of quasi-subordination crosslinguistically. The Hindi-Urdu data in (41a) from the corpus COSH, with intonational information added by Bhatt and Dayal, suggests so:

(41) a. koi: nahī: ja:nta: [ki kya: TiTo sTa:lin-se mile the↑]

someone not knows SUB PQP Tito Stalin-with met

'Nobody knows, did Tito meet with Stalin?' *Bhatt and Dayal 2020:1119*

b. kisi:-ko bhi: ma:lum hai↑ [ki (kya:) TiTo sTa:lin-se mile the↑]

someone-ACC at.all know SUB PQP Tito Stalin-with met

'Does anyone know, did Tito meet with Stalin?'

In section 2 I explained the unacceptability of embedded inversion under *know* as a result of the contradiction between the not-at-issue condition of possible ignorance on the part of the matrix subject and the at-issue assertion of their knowledge regarding the nucleus proposition. The lexical semantics of *remember* includes a presupposition about knowledge at a time prior to the time of evaluation. With respect to knowledge at the time

of evaluation, however, *remember* aligns with *know*. As (42a) shows, the same explanation applies to the unacceptability of embedded inversion under *remember* as under *know*:

- (42) a. *[Sue remembers [was Henry a communist↑]]
 $\diamond \neg \text{know}(\text{Sue}, \text{Ans}(\text{Q})); \text{remember}(\text{Sue}, \text{Ans}(\text{Q}))$
- b. [Sue doesn't remember [was Henry a communist↑]]
 $\diamond \neg \text{know}(\text{Sue}, \text{Ans}(\text{Q})); \neg \text{remember}(\text{Sue}, \text{Ans}(\text{Q}))$
- c. [Does Sue remember↑ [was Henry a communist↑]]
 $\diamond \neg \text{know}(\text{Sue}, \text{Ans}(\text{Q})); \left\{ \begin{array}{l} \text{remember}(\text{Sue}, \text{Ans}(\text{Q})) \\ \neg \text{remember}(\text{Sue}, \text{Ans}(\text{Q})) \end{array} \right\}$

A similar contradiction between the not-at-issue and the at-issue components does not arise in the case of matrix negation, as shown in (42b). Not remembering the answer is entirely compatible with possible ignorance on the part of the agent. Past knowledge is not at odds with the not-at-issue requirement, which is about possible ignorance at the time of evaluation. The last case in (42c) involves a matrix yes/no question. That is, it is only felicitous in contexts where both options are open: Sue remembering the answer or Sue not remembering the answer. The first option is incompatible with the not-at-issue requirement of possible ignorance (as in the case of (42a)), but the second is compatible with it (as in the case of (42b)). This means that (42c) is predicted to be acceptable. This will do for now, but we will return to the case of matrix questions, such as the one in (42c), in section 3.3.

The shiftiness of responsiveness is noted by McCloskey, who entertains the possibility of a structural distinction in embedding, with rogatives embedding a larger structure like SAP/ForceP and responsiveness embedding a smaller structure like CP. He gives this up, however, because of paradigms like (40): “the necessary discriminatory work is done by ultimately pragmatic conditions . . . we do not want to hardwire into the lexical entry of a

resolutive [responsive] predicate a constraint which forbids it to combine with a complement of the higher type” (McCloskey 2006:116). The proposal I have advanced is an attempt to nail down the pragmatic conditions McCloskey alludes to. We will comment further on the implications of this approach for a theory of selection in section 6, but I would like to conclude the discussion here by showing that the lexical semantics of the embedding predicate and the proposed not-at-issue condition on quasi-subordination can lead to a different distributional outcome than the one we have been discussing.

Consider the following naturally occurring sentence, an instance of quasi-subordination under the responsive verb *forget*:

(43) a. I have forgotten, [did Ann get A’s in her 1st year courses↑]

◇¬know(Speaker_C, Ans(Q)); forget(Speaker_C, Ans(Q))

b. Meaning of *forget*: x doesn’t know Ans(Q)

Presupposition of *forget*: x used to know Ans(Q)

Contribution of PerpP_{CQ}: ◇x doesn’t know Ans(Q)

As shown in (43b), the presupposition of *forget*, like that of *remember*, is about knowledge at a time prior to the time of evaluation. However, unlike *remember*, *forget* entails ignorance of the prejacent at the time of evaluation, which is consistent with the requirements of Persp_{CQ}. As predicted on the present approach, *forget* can participate in quasi-subordination in its unadorned form, unlike the two other responsive predicates we have looked at so far, *remember* and *know*.

To sum up, the evidence from the shiftiness of responsive predicates provides further support for the approach to quasi-subordination in terms of semantic (in)compatibility proposed in section 2.

3.3 Questions De Se?

So far, I have only invoked the requirement of ignorance on the part of the perspectival center to license quasi-subordination. I now consider whether desire for information must also be factored into understanding how quasi-subordination of interrogatives works.

3.3.1 The Case for Questions De Se There is a distinction between the notions of *possible ignorance* on the part of an individual, and the question being (*potentially*) *active* for that individual. To see what is at issue, consider the following dialogue. The first dialogue shows that quasi-subordinated questions like (43a) can be used to solicit information, as we saw in section 3.2. The second dialogue shows that it cannot be used to respond to a question:

- (44) a. Speaker A is writing annual evaluation letters for graduate students. She asks her colleague (43a): **I have forgotten, did Ann get A's in her 1st year courses?**
- b. Speaker A: **Did Ann get A's in her 1st year courses?**
Speaker B: **I used to know but now I've forgotten**
[whether she did/whether she got A's in her 1st year courses].
***[did she↑ / did she get A's in her 1st year courses↑].**

There is only one difference between the two dialogues. In (44a), the person using the quasi-subordinated structure is the one interested in the answer to the question. In (44b), it is Speaker A who is interested in the answer, Speaker B is simply responding that they cannot help. Speaker B can convey this using a regular subordinated structure but not a quasi-subordinated structure. This tells us that the lexical meaning of *forget*, which conveys ignorance about the nucleus proposition, is not a sufficient condition for quasi-subordination of interrogatives. Something more is needed.

While ignorance as well as the desire for information are both part of the felicity conditions for the speech act of asking, recall that the relation between the two is not symmetrical, as was shown in (25c): $\forall x \forall Q [P\text{-ACTIVE}\text{-for}(Q, x) \rightarrow \diamond \neg \text{know}(x, \text{Ans}(Q))]$. While one cannot desire information about a question without being ignorant about the answer to it, one can definitely be ignorant about the answer and be either unaware or uninterested in the question. The idea of a question being *potentially active* is meant to signal the relevant individual's interest in learning $\text{Ans}(Q)$. What seems to go wrong in (44b), then, is that Speaker B is merely responding to a query but are not themselves interested in it.

We can think of the requirement of a question being active for an individual as the individual having a *de se* attitude to it. That is, they are invested in finding out the answer to the question and are aware of that fact.²² This requirement would seem to complete the analogy between centered questions and centered propositions.

3.3.2 Who Has the Attitude De Se A further point worth discussing, however, is whether in quasi-subordinated cases it is Speaker_C or the attitude holder who must have the *de se* attitude. The current proposal ascribes the property to PRO, and therefore to whichever individual binds it. In the example we have been looking at, the individual who has the *de se* attitude is clearly Speaker_C . This could be because PRO is bound by an argument, the 1st person pronoun, that happens to refer to Speaker_C . Or it may be because it is necessarily Speaker_C who must hold the *de se* attitude. Is there a way to separate these two possibilities?

Let us step back a bit and remind ourselves that we have successfully used the perspectival center's ignorance of and potential interest in the answer to the question denoted by the CP to explain contrasts in judgment for minimal pairs like the following:

- (45) a. Mary *knows/✓ wants to know [did Sue leave early↑ / who should Sue talk to↑].
 b. I *remember/✓ forget [did Sue leave early↑ / who should Sue talk to↑].

However, there are a few issues that bear further probing. The first issue has to do with the pair *remember* and *forget* in matrix clauses that are themselves questions. I repeat (42c) in (46a) and add the variant in (46b):

- (46) a. [Does Sue remember↑ [was Henry a communist ↑]]
 $\diamond \neg \text{know}(\text{Sue}, \text{Ans}(\text{Q})); \left\{ \begin{array}{l} \text{remember}(\text{Sue}, \text{Ans}(\text{Q})) \\ \neg \text{remember}(\text{Sue}, \text{Ans}(\text{Q})) \end{array} \right\}$
 b. *[Have you forgotten↑ [was Henry a communist ↑]]
 $\diamond \neg \text{know}(\text{Addressee}_C, \text{Ans}(\text{Q})); \left\{ \begin{array}{l} \text{forget}(\text{Addressee}_C, \text{Ans}(\text{Q})) \\ \neg \text{forget}(\text{Addressee}_C, \text{Ans}(\text{Q})) \end{array} \right\}$

The explanation given earlier for the acceptability of (46a) cannot be valid. If (46a) is acceptable because the possibility of not remembering makes the not-at-issue and the at-issue components compatible, (46b) should also be acceptable since forgetting (rather than not forgetting) would lead to compatibility. What seems to be relevant here, however, is whether a positive answer to the matrix question in each case can lead to a resolution of the question that the speaker is interested in, namely Henry being or not being a communist. A positive answer to the matrix question in (46a) can, but a positive answer to (46b) cannot. In other words, the speech act is really about the embedded question and the matrix question is simply a path to resolving the embedded question.

The idea that an embedded clause can be discourse active or convey the main point of the utterance has been discussed in Dayal and Grimshaw 2009 and Simons 2007. For example, it is the embedded rather than the matrix clause in (47a–47b) that calls for a response. This is shown in (47c), where the felicitous answer is the one that addresses the embedded question, not the matrix assertion:

- (47) Dept Secy to new faculty member: [The Chair wants to know
- a. [Perspective_{PCQ} can you teach Semantics 1 next semester↑]].
 - b. [CP if you can teach Semantics 1 next semester]].
 - c. Faculty member: Yes, I can. / #Great that she cares.

So, how does the idea of a discourse active embedded question fit into the picture of a perspectival center that I have been sketching? (47b) shows that embedded inversion is not a necessary condition for an interrogative complement to be discourse-active. Neither is it a sufficient condition, as can be seen from (10a), repeated below:

- (48) [Everybody wants to know [did I succeed in buying chocolate for Winifred↑]].

McCloskey's discussion of this naturally occurring example suggests that Ans(Q) was in the common ground when this sentence was uttered. That is, Speaker_C and Addressee_C were both aware of the answer. It was the individuals referred to by the matrix subject *everybody*, for whom the embedded question was potentially active. This follows from the account we have given in terms of the subject being the binder of PRO in quasi-subordination, and thus having the *de se* attitude.

The cases we have discussed where the matrix subject is the one potentially interested in the embedded question are those where the matrix clause is a declarative and the subject a third person. There seems to be a layer of complexity that is introduced when the matrix is an interrogative. Consider the examples in (46a–46b), with a 2nd person in subject position: *Do you remember↑/*Have you forgotten↑ [was Henry a communist↑]*. It is clear that it cannot be the matrix subject, namely Addressee_C, who is invested in the question, it has to be Speaker_C who is. But now consider the following:

- (49) a. [I/*you have forgotten [was Henry a communist↑]]
 b. [Have *I/*you forgotten↑ [was Henry a communist↑]]

We have already discussed examples with the acceptable 1st person pronoun with declaratives in (49a) in section 3.3.2. The 1st person pronoun in (49b) is unacceptable, however, unless it is construed as an echo question. Its unacceptability as an information seeking question, we can speculate, is due to the fact that a person cannot be ignorant about their own state of knowledge so a query about that does not get off the ground. Note though that this fact is independent of quasi-subordination since a canonical indirect question displays a parallel effect. *Have I forgotten whether Henry was a communist?* is unacceptable as an information seeking question about Henry's past. It can only be interpreted as an echo question. The burden for the unacceptability of (49b) with 1st person is therefore independent of the presuppositions related to Persp_{CQ}.

The suggestion I wish to make about the 2nd person pronoun in (49a–49b) was already foreshadowed in my earlier discussion. If Addressee_C has forgotten Ans(Q), they cannot help to resolve Q. The point to note, however, is that in all these cases it is Speaker_C who seems to be invested in the answer to the embedded question.²³ So it appears that in the case of matrix interrogatives the felicity conditions are anchored somewhat differently than in the case of matrix declaratives.²⁴ This, if it holds up to further scrutiny, would need to be incorporated into the current account by decoupling the requirements of ignorance and the desire for information at Persp_{CQ}.

To conclude this point, there seem to be a number of complex factors that govern the pragmatics of asking and asserting which bear on judgments regarding quasi-subordination of interrogatives. I have provided some initial observations in this subsection as pointers for future work on what those factors might be.²⁵ It should be clear that I do not see the proposal in this paper as the final word on quasi-subordination of

interrogatives, at least as far as the *de se* component and its interaction with the pragmatics of the speech act are concerned, but rather as the first concrete proposal that can shape what the last word on it might be.

3.4 Section Summary

I separated three types of embedding structures: subordination, quasi-subordination, and quotation. I also looked at the shiftiness of responsive predicates with respect to quasi-subordination, noted in McCloskey 2006. I showed that the distribution follows from the interaction of the lexical semantics of the embedding predicate and the proposed requirement of potential ignorance on the part of the perspectival center, extending McCloskey's paradigm to include minimal pairs like *remember* and *forget*. Finally, I also suggested the possibility that quasi-subordination of interrogatives with embedded inversion may have a *de se* flavor, where the perspectival center must not only be ignorant about the embedded question but must also be interested in resolving it. I noted that the holder of the *de se* attitude might shift to the speaker, at least in the contexts that involve inversion embedded under polar questions.

4 More on Interrogative Left Periphery

I have presented a fairly detailed account of the semantic and pragmatic aspects of the interrogative left periphery. I now address some of its prosodic and syntactic aspects. With respect to prosody, I focus specifically on the role of the intonational contour observed in matrix clauses/quotations as well as in quasi-subordination but crucially not in subordination. This observation, translated into the current proposal, amounts to saying that intonation is associated with a structure larger than CP, which I show by looking at prosodic effects in polar and alternative questions (section 4.1). With respect to syntax, I

provide support for the claim that SAP cannot be (quasi-)subordinated by considering possible interpretations of clausal interrogatives with disjunction (section 4.2). I also probe the observation that declarative questions do not embed, connecting it to the fact that such questions are necessarily biased in English, but not in all languages (section 4.3). Finally, I look at Hindi-Urdu simplex polar questions, which crucially require the intonation characteristic of matrix and quasi-subordinated clauses to achieve question status (section 4.4).

4.1 *Intonation at the Left Periphery*

There is a rich literature on the relationship between prosody and meaning but to keep the discussion manageable I will focus on two points that relate most directly to the claim I am making about the interrogative left periphery. The first point bears on assumptions about how prosody and meaning are related. I draw on the generally accepted view that this relationship is mediated through syntax, in the sense that there are syntactic features that feed into LF as well as PF (see Truckenbrodt 2012, Büring 2016, and Hirschberg 2013, among others). Let me illustrate with a well-known phenomenon:

- (50) a. Bill only saw [Kim]_F. He didn't see Lee.
b. Bill only [saw]_F Kim. He didn't talk to Kim.

Here the feature F (focus) in (50a) is realized with prosodic stress on Kim and semantically triggers alternatives to Kim. In conjunction with *only* F leads to the interpretation that Bill saw no other individual in the alternative set. When F is on the verb, as in (50b), the prosodic stress is on the verb and the alternatives triggered involve other relations between Bill and Kim, which *only* rules out.

The kind of prosodic effect that is of relevance to the interrogative left periphery is not the one illustrated in (50), though it involves the same assumptions about the mediating

role of syntactic features. As demonstration, consider the following, where the follow-up to the negative response signals the role of F marking on the CP-internal DP:

- (51) a. Did Mary leave? No, she didn't.
b. Did [Mary]_F leave? No, [Sue]_F did/left.

The question in (51a) has neutral prosody as far as CP internal expressions are concerned, while (51b) has the expression *Mary* that is prosodically stressed. Their distinct semantic/pragmatic effects can be seen in the different natural responses they elicit. The two, however, share the same boundary tone, a final rise and that identifies them both as questions.²⁶ This is the phenomenon of interest to our discussion of the interrogative left periphery.

Let me elaborate on the issue of where the features interpreted by boundary tones are located in the syntactic structure by using the following English paradigm to illustrate:

- (52) a. [_{SAP} Will Mary leave↑]
b. [_{SAP} Mary will leave↓]
c. [_{SAP} Sue knows [_{CP} whether/that Mary will leave]↓]

The question in (52a) is distinguished from the assertion in (52b) both syntactically and prosodically: syntactically in terms of the presence/absence of inversion and prosodically in terms of a final rise/fall. The embedded clause in (52c) lacks both inversion and a final rise and requires instead a complementizer to identify it as an interrogative, rather than a declarative. I take this as evidence that the WH feature on CP is not prosodically interpreted, or to put it another way, C_{+WH} does not have a feature that is prosodically interpreted. In terms of the interrogative left periphery under discussion, the paradigm in (52) also shows that the feature interpreted prosodically as a boundary tone is represented at the SAP level. We can say, then, that in English information seeking polar questions, SA_{ASK} is prosodically interpreted as a final rise; in the case of the corresponding

declarative SA_{ASSERT} is prosodically interpreted as a final fall. This is very much in line with the following from Büring (2016:224) in the way it connects syntactic, semantic/pragmatic, and prosodic information, where the % sign marks the boundary status of the preceding H/L tone:

- (53) a. H_%
 |
 [[ASS]] = λp ∈ D_t. add *p* to the common ground
- b. L_%
 |
 [[INT]] = λp ∈ D_t. set {*p*, ¬*p*} as the current question under discussion

Details aside, what (53) shows is that the illocutionary features of asking and asserting that are represented on the SA head of SAP are responsible for the boundary tone associated with the specific speech act.

The question I want to probe in the rest of section 4 is whether on the account of the interrogative left periphery being pursued here, PerspectiveP hosts similar prosodically interpretable features. Given that there is clear empirical evidence of a final rise in quasi-subordinated interrogatives, we can say with confidence that it does. The claim, then, is that the feature that is interpreted as a boundary tone enters the derivation above CP, at PerspectiveP. The example in (52a) has the following structure, where the arrows in parentheses indicates the prosodic interpretation of the feature on the head SA_{ASK} and Persp_{CQ}:

- (54) [_{SAP} SA_{ASK} (↑) [_{PerspectiveP} Persp_{CQ} (↑) [_{CP} C_{+WH} <will_i> [_{TP} Mary t_i leave]]]]

To emphasize, my use of the polar interrogative and its corresponding declarative in this section is for illustrative purposes, as they provide a nice minimal pair. Not all

interrogatives have a final rise, even when they are information seeking questions. For example, wh questions and alternative questions do not have the same prosody as polar questions (Bartels 1997, among others). The claim therefore is not that SA_{ASK}/Persp_{CQ} are prosodically interpreted as a final rise but rather that they are interpreted prosodically in whatever way is appropriate for that particular type of question. The claim in this paper, then, is best understood in the following way: whatever is the boundary tone for a particular type of speech act and clause-type in matrix clauses/quotations is not the prosodic realization of the C_{+WH/-WH} feature. Rather, it is the prosodic realization of features higher up in the left periphery, the feature on the head of SAP or the feature on the head of PerspectiveP.²⁷ The rest of this section delves into the implications of this proposal.

4.2 *Alternative Questions, Prosody, and Embedding*

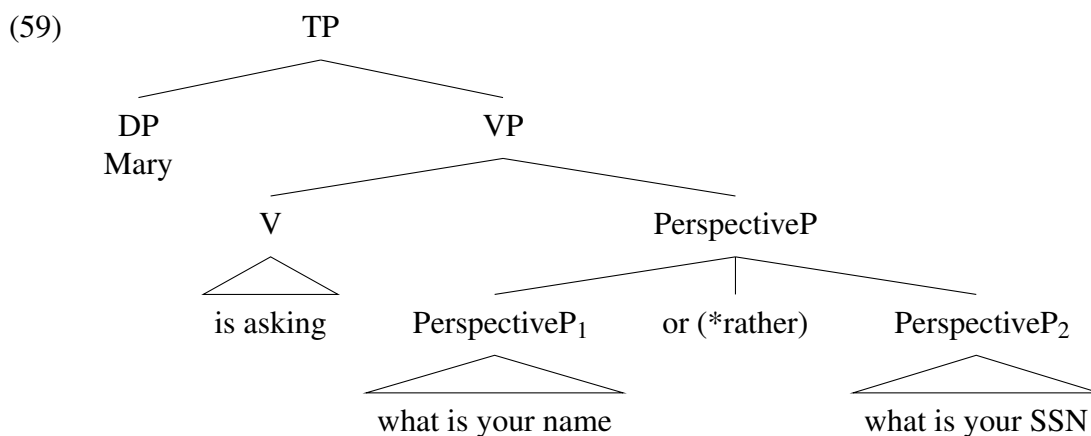
In this section I look at questions involving disjunction to provide support for two aspects of the claim about the left periphery. The first point, already foreshadowed in section 4.1, is that CP does not have boundary tones. The second point is the claim made in sections 2 to 3 that SAPs do not embed.

4.2.1 *The Final Fall of Alternative Questions* Alternative questions have been discussed at length in the semantic literature and are known to include the following three prosodic features: pitch accents on the alternatives, a prosodic break between alternatives, and a final fall (Bartels 1997, a.o.). These three features seem to be in evidence in direct as well as in embedded alternative questions. The set of embedded alternative questions include cases of quasi-subordination as well as cases of regular subordination. We use embedding predicates like *want to know/the question is* to illustrate quasi-subordinated

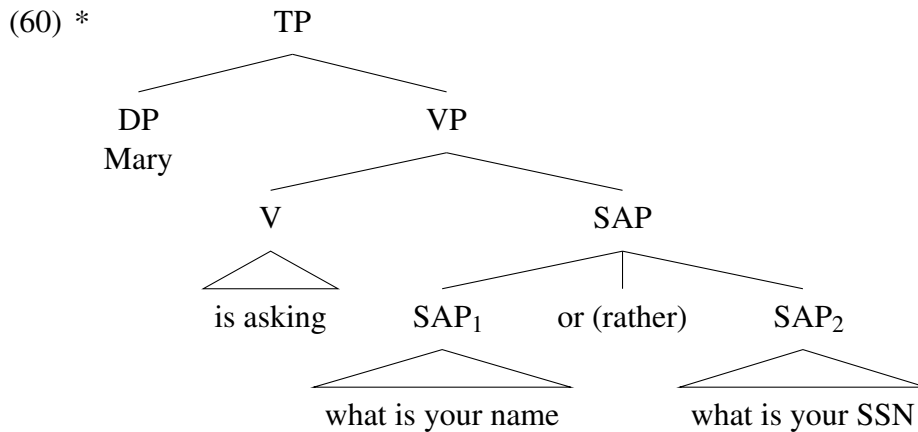
- c. **Choice reading**: the speaker leaves it up to the addressee to answer either Q1 or Q2 — that is, which question to answer is the addressee’s choice.

On the cancellation reading, the speaker realizes that an SSN is a better identifier than a name and so cancels the first question in favor of the second. On the choice reading, the speaker can work with either piece of information and leaves it up to the addressee to answer the first or the second question. One diagnostic that separates the two is the use of *or* or *rather* instead of simple *or*. With this substitution, the question in (58a) loses the choice reading, leaving the cancellation reading as the only interpretive possibility.

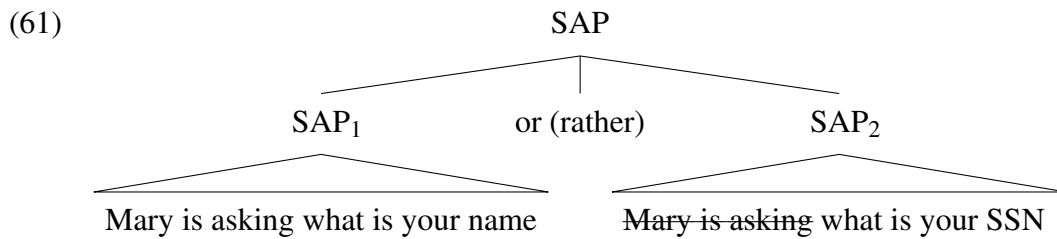
Against this background, consider the different predictions about the embedding of such questions, depending on whether or not SAP quasi-subordination is possible. There are two possible structures to consider for the question *Mary is asking what is your name or (rather) what is your SSN*. By anchoring the 2nd person pronoun to the addressee in the context, we ensure that we are dealing with quasi-subordination rather than quotation:



Here the speaker reports that Mary can work with either piece of information, the name or the social security number, leaving it up to the addressee to choose which one they want to answer. On this reading *or rather* is unacceptable. The more interesting question is whether quasi-subordination could involve a disjunction of SAPs, as shown below:



This structure, if it were available, would have the following interpretation. The speaker is reporting to the addressee that Mary is interested in Q1 but Mary is canceling it in favor of Q2. This reading is not available, which then begs the question of what the correct structure for *Mary is asking what is your name or rather what is your SSN* could be. I suggest the following:



This structure involves ellipsis of the matrix clause in the second disjunct. It has only the cancellation reading, where the speaker cancels their first *assertion* and offers the second *assertion* as more accurate. In this case, Mary is asking for one piece of information, namely the addressee's SSN, which the speaker misreports in the first disjunct but corrects themselves with the second disjunct.

Wrapping up the discussion in sections 4.2.1 to 4.2.2, we now have evidence for the existence of a middle layer in the interrogative left periphery, PerspectiveP, where the features interpreted as boundary tones enter the derivation rather than at the lower CP

level. And we have evidence that while PerspectiveP can be quasi-subordinated, SAP cannot.

4.3 *Declarative Questions and Bias*

Let us now turn our attention to certain complexities in the interpretation of polar questions and see how they fit into the view of the interrogative left periphery that we are working with. We noted in section 1 that declarative syntax plus rising intonation necessarily leads to bias in English polar questions (Büring and Gunlogson 2000, Gunlogson 2004). I will explore whether the view of the interrogative left periphery that we have developed can shed light on why this should be the case:³¹

- (62) a. Do you drink wine? *neutral Q*
b. You drink wine? *biased Q*

Let us start by asking how bias can be identified in questions. An example of a good context for the neutral question interpretation is one where the speaker and addressee are at a restaurant and the speaker asks the question in order to decide whether to order a bottle of wine to share. There need be no prior knowledge or expectation on the speaker's part about what the answer might be. An example of a good context for the biased question interpretation is one where the speaker thought the addressee was a teetotaler, but notices the addressee looking at the wine list and is somewhat surprised. A biased question, then, can be defined as projecting a speaker's (tentative) commitment to a proposition with a request to the addressee for confirmation. In this sense, a biased question is a more complex speech act than a neutral question. Connecting this back to the issue of syntax, the question in (62a) has interrogative syntax and can be used felicitously in either of these contexts; the one in (62b) has declarative syntax and is only felicitous in the second context.

Before considering a possible explanation, we note that this pattern does not hold crosslinguistically. Hindi-Urdu and Italian are two languages where it is possible to have a neutral question interpretation for declarative questions. This is shown for Hindi-Urdu in (63a) and for Italian in (63b):³²

- (63) a. a:p shara:b pi:te haĩ? *neutral/bias Q*
 you wine drink
 ‘Do you drink wine?’ & ‘You drink wine?’
- b. bevi il vino? *neutral/bias Q*
 drink the wine
 ‘Do you drink wine?’ & ‘You drink wine?’

The question that arises is how bias, intonation, and syntax interact to lead to different results across languages. Let us articulate the problem in terms of the proposal about the left periphery, starting with English. The structure in (64a) leads to a neutral question interpretation because the CQ feature on Persp (potentially interpreted as a final rise), is consistent with the SA_{ASK} feature above it and the C_{+WH} feature below it:

- (64) a. Do you drink wine?
 [SAP ASK↑ [PerspectiveP Persp_{CQ}(↑) [CP C_{+WH} you drink wine]]]
- b.
 [SAP ASSERT(↓)•ASK↑ [PerspectiveP Persp_{CP}(↓) [CP C_{-WH} you drink wine]]]

The structure in (64b) represents biased questions as combined speech acts, specifically involving both a *tentative* assertion and a query, as discussed at the beginning of this section.³³ ASSERT licenses a fall and ASK licenses a rise at SAP. The structure is licit because Persp_{CP} (centered proposition) is potentially interpreted as a fall, matching the –WH specification on C⁰. Crucially, though, it is also consistent with one of the

specifications at SAP, namely the tone that interprets SA_{ASSERT} . The boundary tone that is associated with (64b) is the final rise, the prosodic realization of the primary illocutionary feature: SA_{ASK} .

A nonbiased reading for the declarative question would involve a structure like (65):

(65) *You drink wine?

*[SAP ASK_{\uparrow} [$PerspectiveP$ $Persp_{CQ}(\uparrow)/Persp_{CP}(\downarrow)$ [CP C_{-WH} you drink wine]]]

This structure is ruled out because a CQ (centered question) feature on the head of PerspectiveP is compatible with SA_{ASK} but incompatible with [CP_{-WH}]. Alternatively, a CP (centered proposition) feature on the head of PerspectiveP is compatible with [CP_{-WH}] but incompatible with SA_{ASK} . That is, a combined speech act is necessary to mediate between declarative syntax and the primary illocutionary act of questioning.

To sum up the discussion so far, biased questions which have mixed properties of both illocutionary acts, asserting and asking, tell us that the feature on PerspectiveP mediates between the features related to the illocutionary act in SAP and the features related to syntax in CP. The mismatch between an illocutionary act of asking and a declarative syntax can only be mediated by a PerspectiveP, if the illocutionary act includes a (tentative) assertion.

Turning now to Hindi-Urdu and Italian, we note that the two languages crucially do not make any syntactic distinction between declarative statements and polar questions. That is, Hindi-Urdu (66a–66b) without the final rise would be interpreted as assertions, rather than questions. One way to think of this is to take such languages to not force clause-typing at the level of CP:

- (66) a. a:p shara:b pi:te haĩ?
 [SAP ASK↑ [PerspectiveP Persp_{CQ}(↑) [CP C_{αWH} you drink wine]]]
- b. a:p shara:b pi:te haĩ?
 [SAP ASSERT(↓)•ASK↑ [PerspectiveP Persp_{CP}(↓) [CP C_{αWH} you drink wine]]]

The neutral Q interpretation is available in (66a) because the CP is neutral with respect to clause typing. C_{αWH} is compatible with a rise marking questions as well as with a fall marking assertions. The neutral interpretation has a simple speech act of ASK and the relevant feature C_{QUESTION} at PerspectiveP is compatible with both SAP and CP. The biased question interpretation has the same structure as in English declarative questions, as shown in (66b): the feature CP_{PROPOSITION} at PerspectiveP is compatible with CP as well as with the secondary speech act of assertion in SAP.³⁴ The same explanation applies to Italian so we do not show it here.

The approach I have taken here provides a straightforward answer to a question that, to the best of my knowledge, has not been addressed in the literature so far. Both [Gunlogson \(2004\)](#) and [McCloskey \(2006\)](#) note that declarative questions cannot be embedded under quasi-subordination, as we saw in section 1: **the question is, you drink wine?* Let us see if the line I am pursuing can shed light on this:

- (67) a. [PerspectiveP Persp_{CP}(↓) [CP C_{-WH} you drink wine]]
- b. * [PerspectiveP Persp_{CP}(↑) [CP C_{-WH} you drink wine]]

I have claimed that SAP cannot be subordinated or quasi-subordinated. With SAP out of the picture, the information that the embedded clause is a question is unrecoverable. If there is a final fall, as in (67a), it signals that the clause is an assertion, consistent with CP_{-WH}; if there is a final rise, as in (67b), it signals an interrogative but that is incompatible with the declarative syntax of the C_{-WH} complement. There is, therefore, no possible derivation for quasi-subordinated declarative questions.

This approach to declarative questions helps explain another puzzle, brought to my attention by Donca Farkas (p.c.). Even though declarative questions cannot be quasi-subordinated, they can be referred to as *questions* (see also Rudin 2018):

(68) **A:** You drink wine?

B: That's a silly question. / What kind of question is that?

On the present approach, each of the three structures, [CP C_{+WH}], [PerspectiveP Persp_{CCQ}] and [SAP SA_{ASK}] can be called a question in normal English usage. There is no reason, however, to expect that these structures should all have the same embedding potential. Distinguishing between the embedding of PerspectiveP under quasi-subordination and locating bias of the kind manifested by declarative questions at SAP explains the apparent disconnect between (67) and (68).

One final point may be worth clarifying before we end this section. I have tried to explain when a declarative question is obligatorily interpreted as a biased question and when it can be interpreted as biased or neutral, depending on the context. This does not mean that interrogative questions in languages like English are necessarily neutral. We know, for example, that negation and other expressions can introduce bias. I assume that is so for independent reasons having to do with the interaction of negation or other presupposition triggers and a C_{+WH}.³⁵

4.4 *Simplex Polar Questions*

We saw that Hindi-Urdu and Italian align with each other to the exclusion of English with respect to the interpretive possibilities for declarative questions. We now look at a phenomenon where Italian and English behave one way and Hindi-Urdu another. Italian and English both allow simplex polar questions (questions that have only a simple clause

p without its negation *or not (p)* in direct questions as well as in quasi-subordinated and subordinated positions:

- (69) a. [SAP Do you drink wine (or not)]?
 [SAP Bevi il vino (o no)]?
- b. The question is, [PerspectiveP do you drink wine (or not)]?
 La domanda è [PerspectiveP se berrai il vino (o no)]?
 depends on whether she has to work tomorrow.
 [CP Se berrà il vino (o no)] dipenderà dal fatto che lavorerà domani.
- c. [CP Whether she will drink wine (or not)]

Hindi-Urdu, on the other hand, allows simplex polar questions only in matrix and quasi-subordinated positions, both distinguishable from subordinated clauses by prosodic cues:

- (70) a. [SAP[PerspectiveP (kya:) [CP anu ja:egi: (ya: nahī:)]↑]
 PQP Anu will.go or not
 ‘Will Anu go (or not)?’
- b. ravi ja:nna: ca:hta: hai [PerspectiveP ki (kya:) [CP anu ja:egi: (ya: nahī:)]↑]
 Ravi to.know wants SUB PQP Anu will.go or
 not
 ‘Ravi wants to know, will Anu go (or not)?’

In regular subordination, simplex polar questions are ruled out, as shown in (71). The alternative has to be overtly expressed:

(71) ravi ja:nta: hai [CP ki anu ja:egi: *(ya: nahĩ:)]

Ravi knows SUB Anu will.go or not

Intended: ‘Ravi knows whether Anu will go.’

Note that this fact is independent of the nature of the embedding verb. The example in (71) without *ya: nahĩ:* would be unacceptable even with the rogative *ja:n-na: ca:h-na:* ‘want to know’, unless it had the tell-tale sign of quasi-subordination (a slight pause and rising intonation), as in (70b). This pattern of judgments is robust and uncontroversial. Interestingly enough, the reasons behind the pattern have never been explored in previous literature. Here is an attempt.

When we consider the structure of the CP complement in the three languages, we notice that English and Italian have dedicated complementizers for embedded polar questions, *whether* in English and *se* in Italian. This means that both English and Italian have syntactic ways of marking the CP_{+WH}. The following picture emerges on this view. As we proposed in section 2.1. $[[C_{+WH}]] = \lambda p \lambda q [q = p]$, so both English and Italian simplex polar questions can shift to a set of propositions meaning, with +WH being triggered by the presence of *whether/se*. In the absence of a similar complementizer in Hindi-Urdu, C remains under- or unspecified, thus $[[[CP C_{\alpha WH}]]] \neq \lambda p \lambda q [q = p]$. I suggest that the default interpretation for such clauses is propositional, as shown in (72a):

(72) a. $[[[CP C_{\alpha WH} [TP pa:ni: paR raha: hai]]]] = \wedge$ it is raining

rain fall PROG.PRS

b. $[[[PerspectiveP Persp_{CQ} \uparrow [CP C_{\alpha WH \rightarrow +WH} [TP pa:ni: paR raha: hai]]]]] =$

{ \wedge it is raining}

When a simplex structure like (72a) is embedded under $Persp_{CQ}$ with its associated rising boundary tone, as in (72b), the +WH feature is activated in order to make the structure interpretable. Once the shift from a proposition to a set of propositions meaning occurs,

the structure can feed into a matrix question or a quasi-subordinated question. The latter is detectable through a slight pause after the embedding verb, rising intonation on the quasi-subordinated clause and the possibility of the optional PQP *kya:* inside PerspectiveP.

A second option for the embedded clause to activate the C_{+WH} feature is through the presence of overt alternatives within TP. We can assume that the presence of such alternatives is consistent with a set of propositions meaning, allowing for a question interpretation, as shown in (73a–73b). Such a structure can be the complement of any interrogative embedding predicates, be it a rogative or a responsive predicate — quasi-subordination is not required.³⁶

- (73) a. $\llbracket [TP \text{ pa:ni: paR raha: hai ya: nahī}] \rrbracket = \{ \wedge \text{it is raining, } \wedge \neg \text{it is raining} \}$
rain fall PROG.PRS or not
- b. $\llbracket [CP C_{+WH} [TP \text{ pa:ni: paR raha: hai ya: nahī}]] \rrbracket =$
 $\{ \wedge \text{it is raining, } \wedge \neg \text{it is raining} \}$

Let us take stock. Clause-typing happens at CP via the $+WH$ feature but this feature needs to be activated. For constituent questions, it can be activated through the presence of a wh expression that moves to Spec CP (overtly or covertly). For polar questions, such licensing requires a dedicated wh complementizer such as *whether* in English and *se* in Italian. It can also be licensed by a clause-typing Q-morpheme of the kind exemplified by Japanese *ka/no*.

Clause typing, in the current proposal, results in a type-distinction between declarative and interrogative. That is, I separate the issue of clause-typing from the question of whether the set denoted by a polar interrogative is a singleton or not. Following Bolinger (1978) and much recent work, I take polar questions to start life as singleton propositional sets. One convincing piece of evidence for this is the status of unconditionals as opposed to indirect questions (see Biezma and Rawlins 2012):

- (74) a. [CP_{+WH} Whether she will leave early *(or not)], I will leave early.
 b. [CP_{+WH} Whether she will leave early (or not)] will depend on her mood.

Whether establishes that the complement in both structures is interrogative (that is, it is clause-typed C_{+WH}) but it cannot ensure that the set has more than one member. The unconditional structure in (74a), for example, has to count on the TP-internal alternative *or not* to achieve the required plurality. This does not hold for the embedded clause in (74b), where the shift from a singleton to a plural propositional set is possible with or without the presence of the negated alternative. I suggest that just like $Persp_{CQ}$, an embedding predicate can also coerce a singleton propositional set into the corresponding plural propositional set needed for a proper question meaning. We will return to potential differences between the role of $Persp_{CQ}$ and a WH selective embedding predicate in section 6.

To sum up this point, a wh complementizer is needed to shift a clause to a set of propositions meaning. Simplex polar questions can occur in subordinated contexts in English, Italian, and Japanese because they are already clause-typed and denote sets of propositions rather than propositions. The embedding verb coerces the singleton into a plural propositional set. Hindi-Urdu shows that an embedding verb cannot, on its own, shift the type of a clause from $-WH$ to $+WH$, which is why simplex polar questions cannot occur as subordinated questions in Hindi-Urdu. $Persp_{CQ}$ is needed to force clause-typing and the creation of a plural propositional set.

Returning to the earlier discussion of declarative questions, we can characterize the difference between English and Italian in terms of clause typing. We can say that clause-typing must happen at the earliest in English but can be delayed in Italian. Thus in the absence of a wh phrase or the complementizer *se*, $C_{\alpha WH}$ remains an option in Italian, leading to the possibility of a neutral question interpretation for a clause with declarative

syntax plus rising intonation. In the absence of *whether*, inversion serves to type the clause C_{+WH} in English and by implication a CP without inversion as C_{-WH} . This confluence of factors then leads obligatorily to a biased question meaning, as discussed in section 4.3.

4.5 Section Summary

The facts discussed in this section lead to a small revision of the interrogative left periphery. The version in (75) differs from the earlier version in recognizing the possibility of an SAP that can have mixed properties and a CP that may be specified $-WH$ or not be specified for the $\pm WH$ feature at all:

(75) [_{SAP} SA_{ASK}/SA_{ASSERT}•ASK [_{PerspectiveP} Persp_{CQ} [_{CP} C⁰_{+WH/-WH/αWH} [TP...]]]]

Along with recognizing that languages may differ with respect to the requirement of clause-typing at CP, we must also allow for features that can be realized as boundary tones at both SAP and PerspectiveP, though only the feature at the highest level of the structure is prosodically realized. The boundary tone at PerspectiveP must agree with the WH feature at CP, if such feature is present, and it must agree with some illocutionary force feature present at SAP. In motivating these aspects of the left periphery, I touched upon some open problems related to syntactic differences between matrix, quasi-subordinated, and subordinated questions and showed how the present perspective about the interrogative left periphery can shed light on them.

5 Beyond Information Seeking Questions

The proposal about the left periphery argued for in this paper has so far focused on information seeking questions. In this section I explore its applicability to structures involving different speech acts and/or different clause types. In section 5.1 I extend the discussion to imperatives and consider a recent proposal about quasi-subordination of

imperatives. In section 5.2 I look at another proposal about the left periphery which posits a projection anchored to an individual argument, a discourse participant in root clauses and a matrix argument in embedded clauses. In section 5.3 I consider rhetorical questions that share syntactic properties with information-seeking questions but serve a very different discourse function. The goal in each case is to show how the current proposal about information seeking questions connects to related empirical and theoretical issues discussed in recent literature.

5.1 *Quasi-subordinated imperatives*

Imperatives provide an interesting test case for the applicability of the current approach. Crnić and Trinh (2011) discuss the following paradigm, earlier noted for German (Schwager 2006), which they argue involve embedded imperatives. They show that such imperatives have the syntax of matrix clauses but the pronominal system of subordinate clauses:³⁷

- (76) a. John said (*that) call Mary. *Context:* John said, “Call Mary.”
 b. John said call his mom. *Context:* John said, “Call my mom.”
 c. $\llbracket \text{imp} [\text{pro call Mary}] \rrbracket^{c, w, \text{judge}} = 1 \text{ iff } \forall \langle w', x' \rangle \in \text{COMMAND}_{w, \text{judge}}.$
 $\llbracket \text{pro call Mary} \rrbracket^{c, w', x'} = 1$

Partially following Schwager (2006), they analyze the imperative operator as a covert modal. They further propose that the quantificational domain of commands involves a judge, in the sense of Lasersohn 2005 and Stephenson 2007, as shown in (76c). The judge is anchored to Speaker_C in matrix clauses, to the matrix subject in embedded contexts: “Call Mary is true in w iff the addressee calls Mary in each centered world compatible with what the speaker commands in w , and John said call Mary is true in w iff the addressee calls Mary in each centered world compatible with what John commands in w ”

will settle for showing one way in which the quasi-subordination of imperatives analyzed by Crnić and Trinh can be incorporated into the analysis of the restricted interpretation of the imperative subject by Zanuttini, Pak, and Portner. The first task is to connect Zanuttini, Pak, and Portner’s jussive operator to Crnić and Trinh’s judge parameter. The following provides one implementation in schematic terms. The crucial point is that the Jussive operator that binds the *pro* subject of the imperative, represented by the subscript *j* in (78b), is anchored to the perspectival center, represented by the superscript *i*. That is, the jussive argument is treated relationally as *addressee-of*(x_i), where x_i is bound by the individual who issues the command. This, I believe, is the minimal requirement for a clause to count as a centered imperative at PerspectiveP:

- (78) a. [_{SAP} SA_{IMPERATIVE} [_{PerspectiveP} PRO_{PerspC_i} [_{CP} C⁰ T-Jussive⁰ [_{TP} pro V ...]]]]
- b. [_{PerspectiveP} PRO_i PerspC_i [_{CP} C⁰ T-Jussive⁰ [\emptyset^i_j] [_{TP} pro_j V ...]]]]

A second issue that arises with embedded imperatives, is the status of the addressee. In the case of matrix imperatives, PRO_i is anchored to the utterance context and the interpretation proceeds as in the original version, with Speaker_C giving a directive to Addressee_C. In the case of quasi-subordination, anchoring is to the reported context, with the matrix subject binding PRO_i and the overt or covert indirect object identifying the *pro* subject of the imperative through the Jussive head. If the addressee in the reported context and the utterance context are the same, things are straightforward. If, however, the embedded imperative allows the addressee of the reported context to be different from Addressee_C, some flexibility is required. In such cases, the schema in (78b) picks out the addressee in the reported context, not the one in the utterance context, as the referent of the embedded *pro*.³⁸

There are many other aspects of the syntax and semantics of imperatives that would need to be carefully fleshed out, of course. The brief remarks here were intended to show

that there is reason to expect that the view of the left periphery as including a perspectival center, argued for in connection with interrogatives, also has relevance for imperatives.³⁹

5.2 *Sentience Phrase and Quasi-subordination*

The view of the left periphery as having an articulated structure is not new and has been explored in a number of ways since Rizzi's original proposal. One particular proposal that is close in spirit to the one in this paper is Zu (2018), who argues for a Speech Act projection that only surfaces in root clauses and for an intermediate Sentience projection that can embed under attitude verbs (Zu 2018:8):⁴⁰

(79) The two-tiered structure of discourse

a. Root clauses

The Speech Act Layer	The Sentience layer	root clause
[Speaker [Sp [ADDRESSEE [Adr	[PERSPECTIVE [Sen	[TP ...

b. Attitude complements

root clause	The Sentience layer	complement clause
[Attitude holder [v ...	[PERSPECTIVE [Sen	[TP ...

It is impossible to address the wide array of empirical arguments that Zu provides for her position. I will therefore restrict myself to investigating whether the proposal I have made for the Perspective Phrase in the interrogative left periphery is the same as Zu's proposal about the Sentience layer.

To make things concrete, let us take the paradigm of conjunct vs. disjunct marking in Newari. As (80) shows, conjunct marking is used with 1st person subjects in declaratives and with 2nd person subjects in interrogatives. When 2nd/3rd person subjects occur in declaratives and 1st/3rd person subjects in interrogatives, the disjunct form is required:

- (80) a. ji ana wan-ā /wan-e
 I.ABS there go-PST.CONJ go-NPST.CONJ
 ‘I went/will go there.’
- b. cha ana wan-ā /wan-e lā
 you.ABS there go-PST.CONJ go-NPST.CONJ Q
 ‘Did/Will you go there?’

Zu explains the distribution of the verb forms by positing that conjunct verbs require coindexation between the subject and the closest c-commanding element that represents the SoK (Seat of Knowledge). Otherwise, disjunct verbs must be used.⁴¹ The distribution is predicted since the SoK in declaratives is the Speaker and the SoK in interrogatives is the Addressee.

The variations we have looked at in this paper contrast canonical subordination of interrogatives (*whether she left*) and their quasi-subordination (*should she leave?*), where there is no obvious shift in SoK. Under the terms of the proposed analysis, the subordination structure is a CP, lacking the relevant perspectival center, while quasi-subordination projects one in the larger PerspectiveP. Under the terms of Zu’s analysis, all clauses show sensitivity to SoK, including relative clauses and nonfinite clauses. While Zu makes a compelling case on the basis of the constructions she explores, she does not tell us about embedded questions: “Unfortunately I have not successfully elicited embedded questions in Newari. For unclear reasons the sentences my consultants provide are always direct quotations” (Zu 2018:161). As such, the question whether PerspectiveP argued for here should be identified with SentenceP argued for by Zu cannot be settled on the basis of the available data regarding Newari conjunct-disjunct variations.

While it is clear that the logic of the argumentation proffered by Zu and her conclusions regarding embeddability are very similar to mine, it is not obvious that the

conjunct-disjunct paradigm targets the same type of perspective sensitivity that I have explored in this paper. We must therefore set aside further discussion of the relationship between Zu's proposal and mine and wait till the relevant diagnostics separating quasi-subordination from quotations and subordination can be developed for Newari.

5.3 *Rhetorical Questions and Quasi-subordination*

Rhetorical questions defy the presupposition behind information seeking questions, namely that $\text{Ans}(Q) \notin \text{CG}$. One might even argue that it not only requires that $\text{Ans}(Q) \in \text{CG}$, it counts on that fact to actually respond to a distinct question that is under discussion:

- (81) a. Prospective Graduate Student: Does a committee have to pass the dissertation
in order to get your degree?
- b. Advanced Graduate Student: Duh, is the Pope Catholic?

In this exchange, the advanced graduate student responds to the question posed by the prospective student by a question whose answer they take to be obvious and thereby conveys that the answer to the question being asked should also be obvious. That is, it succeeds as a discourse move by flouting the maxim of relevance.

An issue that has been much debated in the literature is whether a rhetorical question has the same syntax and semantics as an ordinary question or whether the two are distinct at an abstract level. Arguments have been made for both positions but I will side with those that take them to differ only in their pragmatics (Rohde 2006, Caponigro and Sprouse 2007). In other words, I treat the rhetorical reading of a question to arise when the standard presuppositions of asking are contextually ruled out. That is, I think of rhetorical questions as an indirect speech act that provides a way to repair an apparent break in discourse. The question of relevance to us is whether this strategy is available in embedded contexts and how one can analyze its (un)embeddability.

It would be fair to say that rhetorical questions are not readily embeddable, but embedding is not completely ruled out. Pullum (2006) points to the following examples in support of Caponigro and Sprouse’s claim that rhetorical questions are the same as ordinary questions:

- (82) a. Context: Someone addressing a city council meeting in Santa Cruz, arguing that the city is being unfair in its enforcement of the ordinance forbidding people to sleep in a motor vehicle (along with other kinds of illicit camping within the city limits: the target is of course homeless people):
I feel I want to ask [how many rich people this law has ever been applied to].
- b. Context: A Republican candidate for Congress making a stump speech:
I’m wondering [what the Democrats think Iraq would be like a month from now if we brought all our troops home today].

Note that these examples involve subordinate syntax, and to that extent, they speak to their embedding as CPs. The question we might ask is whether rhetorical questions can also be quasi-subordinated. It seems that both examples survive when the complement has matrix syntax: *how many rich people has this law ever been applied to; what do the democrats think Iraq would be like a month from now if we brought all our troops home today.*⁴²

Assuming that these are genuine cases of quasi-subordination, we might propose a condition like $\lambda Q \lambda x: x \text{ believes } \text{Ans}(Q) \in CG. Q$ for the $\text{Persp}_{\text{CRQ}}$ (centered rhetorical question) and a condition for $\text{SA}_{\text{ASK-R}}$ (ask rhetorically) like the following: $\lambda x \lambda y: x \text{ asserts } R(\text{Ans}(Q), Q) \approx R(\text{Ans}(Q_i), Q_i). Q$, where Q_i is the current question in the discourse. This would deliver the desired results. The issue that I cannot explore at this point is whether there are further pragmatic constraints that need to be incorporated. Quasi-subordination of information-seeking interrogatives, we have seen, is restricted to a proper subset of predicates that allow full subordination. Since full subordination of

rhetorical questions is itself very restricted it is hard to come up with a subset that would point to further restrictions due to quasi-subordination.

5.4 *Section Summary*

I discussed three distinct proposals, based on three distinct clause types and/or constructions, to make the case that a proposal for quasi-subordination in terms of centering may be novel in the domain of interrogatives but falls well within the range of ideas that have been argued for in the literature. It goes without saying that there are many other phenomena that I could have engaged with to illustrate this point: German embedded V2, Free Indirect Discourse, Wh slifting to name just three.

6 **Selecting Interrogatives**

My proposal about the interrogative left periphery has obvious implications for our understanding of how complement selection works in natural language. I elaborate on how the distinction between quasi-subordination and subordination relates to the two types of selection that was argued for by Grimshaw (1979): c-selection and s-selection.⁴³

6.1 *Restrictions on Quasi-subordination*

In predicting the distribution of embedded inversion, I appealed to two types of selectional restrictions, illustrated in (83–84) with polar questions but, of course, the same holds for wh questions:⁴⁴

- (83) a. **Mueller wanted to know/was investigating**
[whether Russia interfered in the 2016 election].
- b. **Mueller wanted to know/*was investigating**
[did Russia interfere in the 2016 election↑].

- (84) a. *Mary wants to know/knows* [*whether Sue will leave early*].
 b. *Mary wants to know/*knows* [*will Sue leave early↑*].

In the first case, two predicates that do not seem too far apart in meaning (*want to know*, *investigate*) differ in their ability to take quasi-subordinated complements. In the second case, arguably a single predicate (*know*) shows differential behavior with respect to quasi-subordinated complements, depending on the presence or absence of expressions above it. In the first case, the predicate *want to know* selects both [CP] and [PerspectiveP] but *investigate* only selects [CP]. In the second case, the compositional mechanism can combine the meaning of *know* with the meaning of [CP] but combining it with [PerspectiveP] leads to contradiction, a contradiction that is ameliorated when the meaning of *know* is modified by its embedding predicate *want to*. Both types of restrictions have antecedents in the literature, going back at least to Grimshaw (1979).

Grimshaw argued against a binary distinction between +/–WH, replacing it instead with c-selection and s-selection. The argument for c-selection came from closely related predicates like *wonder* and *ask* that differ on their ability to take DP complements:

- (85) a. *Sue wondered/asked* [*CP what the price of milk was*].
 b. *Sue *wondered/asked* [*DP the price of milk*].

The argument for s-selection came from predicates whose selection seemed to be based on semantic (in)compatibility. Grimshaw argued that exclamatives and interrogatives both have wh fronting and should therefore count as +WH, but they show differential behavior under responsive and rogative predicates:

- (86) *John knows/*wonders* [*CP how very tall she is!*]

Exclamatives differ from interrogatives, she pointed out, in being factive. The ungrammaticality of examples like (86) in the rogative version follows because the

factivity of exclaimatives clashes with the indeterminacy that is inherent to the lexical meaning of rogatives.

Thus the proposal in this paper about the selection of [PerspectiveP] by embedding predicates is in line with a well-established distinction in the theory of selection. The contrast in (83b) is an instance of c-selection, the contrast in (84b) is an instance of s-selection. The question that remains is about the selection of [CP] by embedding predicates. I address this in the next subsection.

6.2 Restrictions on Subordination

In discussing the distribution of [CP] I opted for the binary division between C_{+WH} and C_{-WH} . These features, as I mentioned in section 2, do a reasonably decent job of separating out three classes of embedding predicates, rogatives, responsivenesses, and uninterrogatives. Nothing that I have presented in this paper affects this simple picture, as far as selection of [CP] is concerned. At the same time, it has to be mentioned, that there has emerged a small but significant literature on deriving certain aspects of this distribution from compositional semantics/pragmatics. (Dayal 2016:139–144), for example, discusses d’Avis (2002), Abels (2007, 2010), and Guerzoni (2007), who provided early analyses of predicates like *be surprised* that can take wh questions but not polar questions as complements (87a):

- (87) a. I was surprised at [who came to the party/*whether Mary came to the party].
b. Mary wondered [whether Sue left/who left/*that Sue left].
c. Mary believed [*whether Sue left/*who left/that Sue left].

In recent years even the canonical selectional facts, shown in (87b–87c), have been argued to be amenable to an explanation in terms of appropriately defined semantic composition

(Theiler 2019, Uegaki 2015, among others). All of these works focus on complements with subordinate syntax and do not engage with the possibility of embedded inversion.

While I do not discuss subordination (as opposed to quasi-subordination) in terms of semantic composition, there may be some empirical motivation to explain it in similar terms. The selectional restrictions of *believe* type predicates, for example, cannot be categorically set to C_{-WH} (Elliott 1974, Grimshaw 1979, Huddleston 1993) because of data of the kind seen in (88b–88c):

- (88) a. *I can believe [who is going out with who].
b. I can't believe [who is going out with who].
c. Can you believe [who is going out with who]?

One may argue whether the complements in (88b–88c) are interrogatives or exclamatives, but that is orthogonal to the issue of how the selectional properties of *believe* should be characterized. Since selection applies equally to interrogatives as to exclamatives, the data in (88) shows that *believe* cannot be lexically marked to reject wh-complements categorically.⁴⁵

The jury is still out on whether an adequate elaboration of the combinatorial possibilities, taking into account all aspects of meaning, may explain the data regarding subordination of interrogative [CPs]. The theory of the left periphery that I have proposed would be equally compatible with a theory based on lexical specification on predicates as on a theory based on semantic composition, should the latter turn out to be the correct one. The semantic underpinnings regulating quasi-subordination of [PerspectiveP] that I have articulated in this paper are independent of the phenomenon of [CP] subordination, about which I have not made any novel claims.

6.3 Selection by $Persp_{CQ}$ vs. $V_{[+WH]}$

I will end this section on complement selection by articulating a problem that has emerged from the discussion in this paper, especially section 4, and one that I believe remains unaddressed in current syntactic literature.

I have argued that the semantic reflex of clause-typing is the shift in semantic type, which on the approach adopted here involves a shift from propositions to sets of propositions. I have also argued that this shift happens at C^0_{+WH} . Schematically, then, we have the following possibilities to consider, where $V_{[+WH]}$ is intended to represent a canonical rogative predicate:

- (89) a. $[\dots V_{[+WH]} [_{CP} \text{wh-phrase/whether} [_{C'} C^0_{+WH} \text{Q-morpheme} [_{TP} \dots]]]]$
 b. $[\dots V_{[+WH]} [_{CP} \emptyset_{\text{whether}} [_{C'} C^0_{+WH} [_{TP} \dots \text{OR} \dots]]]]$

In languages such as Japanese C^0_{+WH} can be morphologically realized as a Q-morpheme (*kalno*). In languages like English or Italian, C^0_{+WH} requires a lexical expression in Spec of CP. This requirement can be fulfilled in two ways, by overt wh movement or by lexical insertion of a special wh complementizer for polar questions (*whether/se*). In languages like Hindi-Urdu that lack a special wh complementizer, covert wh movement to Spec of CP can facilitate clause-typing. For polar questions we might posit a null wh complementizer, which itself has to be licensed via agreement with a disjunctive operator inside TP.⁴⁶ The bottom line, though, is that the complement's relationship to the selecting matrix predicate is one of a matching requirement. Its head either is or is not C^0_{+WH} ; no repair mechanism is available if CP is not clause-typed as an interrogative.

The relationship between $Persp_{CQ}$ and its complement is qualitatively different. It too requires a complement that is clause-typed C^0_{+WH} . Structures like (90a) are of course acceptable, where clause-typing has been achieved by overt/covert wh movement or by a

Q-morpheme. Structures like (90b) are also acceptable, where clause-typing has been achieved by the licensing of a null disjunctive operator. The interesting case is in (90c):

- (90) a. [_{PerspectiveP} PRO [_{Persp'} Persp_{CQ} [_{CP} wh/Q [_{C'} C⁰_{+WH} [_{TP} ...]]]]]
 b. [_{PerspectiveP} PRO [_{Persp'} Persp_{CQ} [_{CP} ∅_i [_{C'} C⁰_{+WH} [_{TP} ... OR_i ...]]]]]
 c. [_{PerspectiveP} PRO [_{Persp'} Persp_{CQ} [_{CP} [_{C'} C⁰_{+WH} [_{TP} ...]]]]]

Here the selecting head Persp_{CQ} displays behavior quite distinct from that of selecting matrix predicates, seen in (89). It is able to take a clause that is not clause-typed, that is, a CP that lacks a Q-morpheme, a wh phrase or a null operator licensed by TP-internal disjunction, and effectively turn it into a question. That is, the +WH specification in (90c) owes its life to Persp_{CQ} in the higher structure. This is true for Japanese matrix clauses that do not have a Q-morpheme as well as for Hindi-Urdu simplex polar questions.

The theoretical question that arises is the nature of the difference between the two complementation structures, such that it manifests itself in this way across a range of languages. There are a number of options that come to mind, but to embark on an exploration of those options would take us too far afield. I will therefore simply highlight the fact that this question has emerged because of the particulars of the phenomena that were analyzed in this paper in terms of an articulated left periphery for interrogatives. The problem, however, is independent of the particulars of the proposal itself.

6.4 Section Summary

In this section I related the two types of restrictions on quasi-subordination of embedded interrogatives, proposed in sections 2 to 3, to c-selection and s-selection. The idea that judgments of ungrammaticality may be due to semantic incompatibility proposed to account for the selection of PerspectiveP with a Persp_{CQ} head resonates with similar efforts to explain judgments about canonical interrogative complements, CP with a C_{+WH}

head. I noted that the facts discussed in this paper do not directly depend upon the right account of CP selection. Finally, I noted a difference between the role of Persp_{CQ} , with its attendant syntactic interpretation of inversion and prosodic interpretation of the boundary tone, and $\text{V}_{[+\text{WH}]}$, an embedding predicate that selects for interrogatives. While I have articulated the problem in terms of the analysis proposed in this paper, I pointed out that the puzzle it presents is independently significant for a full understanding of how complementation works in natural language.

7 Conclusion

That the left periphery of interrogative clauses should have an articulated structure is hardly novel. What is novel is an explicit proposal about how that articulated structure relates to meaning. Creating a three-way distinction in the left periphery (clause-typing, followed by centering, followed by contextually anchored speech acts) explains why quasi-subordination of interrogatives is better with rogatives than with responsives and better with some responsives than with others, and how higher level operators can ameliorate otherwise unacceptable cases of quasi-subordinated interrogatives. While the empirical focus was primarily on English embedded inversion, connection to distinct language phenomena from a range of unrelated languages was made at relevant points. The discussion also provided pointers for future inquiries, both empirical and theoretical, related to how syntax, semantics, pragmatics and prosody interface in the domain of questions.

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Notes

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1 There is a vast literature on intonation that this paper cannot hope to do justice to. The particular focus of this paper is on the boundary tone associated with specific question types. I draw, in particular, on [Bartels 1997](#), [Büring 2016](#), [Hirschberg 2013](#), and [Truckenbrodt 2012](#). I will provide details as and when they become relevant to the discussion at hand (see in particular section 4).

2 The subordinator *ki* is often dropped, as indicated by the parentheses in (3b–4b). Nothing should be inferred from its presence or absence in the examples that follow. The phenomenon has not been studied in the Hindi-Urdu syntactic literature so there may well be restrictions on when it can and cannot appear that we are not aware of at this time. As far as I can tell, any such restriction would not bear on the issues discussed here.

3 In earlier versions of this paper, I used the term ForceP for what I am now calling PerspectiveP. The change is only terminological. My claims about the nature of the intermediate phrase remain substantively unchanged. This move was made to avoid confusion since ForceP has a well-established provenance which is more in line with the illocutionary force I am ascribing to SAP.

4 For readability I will color code CP in green, PerspectiveP in blue, and SAP in red.

5 The issue of complement selection is a complex one and will be discussed further in section 6. Here I am using the generalization typically provided in introductory linguistics courses or textbooks to get the discussion off the ground.

6 This generalization will be refined, the first part in this very section and the second part in section 3. There are other syntactic differences discussed by McCloskey, related to adjunction possibilities, for example, that I do not engage with here. See Dayal and Grimshaw 2009 for some discussion. One further point to note: in order to keep the exposition simple I treat *want to know* as a single unit, roughly equivalent to *wonder* for now. The discussion in section 3 will allow us to think of *want to know* in compositional terms.

7 Not all information seeking question have rising intonation. For example, alternative questions allow for a final fall and wh/constituent questions do not necessarily have rising contours either (see Bartels 1997). I nevertheless use the up arrow to signal matrix intonation, because it visually distinguishes between the intonational contours of declaratives used as assertions and the corresponding polar interrogatives with inversion used for questioning. I will try to be explicit when the deviation between the visual signal adopted and the actual intonation becomes significant for the point under discussion. The reader's indulgence on this score would be much appreciated.

8 An anonymous reviewer helpfully points out that the Yale Grammatical Diversity Project website notes this phenomenon as pervasive, without claiming that its use is uniform outside some specific dialects: <https://ygdproject.yale.edu/>. The decision to treat the phenomenon of embedded inversion as representative of English generally is based on the judgments of 16 native speakers of English. 11 of them were undergraduates in a course taught at Rutgers University in Spring 2017. Judgments have also been systematically elicited from 5 colleagues/friends/linguistics graduate students. All 16 were "naïve to the

experiment in question,” in the sense of Mahowald et al. 2016. 3 speakers in the group did not initially accept McCloskey’s data but once alerted to the role of prosody and pronominal reference felt confident giving judgments. One of them offered that they would not themselves use embedded inversion but had heard such sentences and was able to comment on the relevant contrasts. Two other speakers whose judgments were solicited have been eliminated from the count because they were unable to discriminate between quotation and quasi-subordination, even after information was provided. Apart from these specific surveys, the data have been presented at various venues with sizable numbers of English speakers (see acknowledgments). There were no objections beyond an occasional initial resistance of the kind noted above.

9 Perhaps even *wonder* or *want to know* may be able to take quotations and to the extent they can, they will be able to embed declarative questions.

10 The semantic and pragmatic character of quasi-subordination to be developed in sections 2 to 3 is in the spirit of Dayal and Grimshaw 2009 but does not necessarily align with it on the specifics.

11 Thanks to Takeo Kurafuji, Satoshi Tomioka, Yoshiki Fujiwara (p.c.) for the Japanese example in (20c). The English expression *again*, discussed by Sauerland and Yatsushiro, also seems somewhat resistant to embedding but it may or may not be an MQP. As pointed out by Mats Rooth (p.c.), the following is quite acceptable: *She apologetically asked what again was his name*. Other particles discussed by Sauerland and Yatsushiro are German *wieder* and *noch mal* (see also Truckenbrodt 2019). I believe that Mandarin *nandao* analyzed by Xu (2017) and Bangla *naki* analyzed by Bhadra (2017, 2020) may also be examples of what I am calling MQPs.

12 The reader is referred to Chapter 2 of Dayal 2016 for further discussion, as well as for a comparison with other approaches to question semantics.

13 The propositions in (21) use Montague’s intensional operator $\wedge_{sue\ saw} x_i$. This is equivalent, for present purposes, to $\lambda w\ sue\ saw_w x_i$. Similarly, (22) uses Montague’s extensionalizer \vee_p instead of the equivalent $p(w)$. The choice of formalism is for ease in readability.

14 The initial motivation for removing the truth requirement from the question denotation had to do with truth conditions associated with the scope marking construction (Dayal 1993). This move has since been widely accepted for a wide range of facts.

15 The answerhood operator in Dayal 1996 includes a clause to derive the shift from uniqueness to maximality in the case of plural *wh* phrases but we omit it here as it does not affect the issues dealt with in this paper (see Dayal 1996:44–50 for discussion).

16 Briefly, at-issue content is what calls for a direct response, an acceptance or denial in the case of an assertion: *the student in my class is going to fail*. Not-at-issue content cannot be directly challenged in the case of an assertion, something like the following is required: *Hey, wait a minute. I didn't know there was only one student in your class* (see von Stechow 2004).

17 I do not treat *kya*: as the overt realization of Persp_{CO} , but rather place it in Spec of PerspectiveP. I follow Bhatt and Dayal (2020) in taking the contribution of *kya*: to partition the clause into a part that is given and a part that can be challenged in the answer to the question.

18 Note that it is required that $\text{Ans}(\text{Q})$ have been in the common ground earlier, but not that the question needs to have been asked before. For example, if Speaker A introduces themselves by giving their name and other details, Speaker B can later ask *what was your name again?* even though the question *what is your name?* is being asked for the first time.

With respect to *kke*, we could define it by adapting Sauerland and Yatsushiro's proposal: $\llbracket \text{kke} \rrbracket = \lambda Q \lambda x \lambda y: \text{Ans}(\text{Q}) \in \text{CG at } t' < t \wedge \neg \text{remember-at-t}(y, (\text{Ans}(\text{Q}))) \wedge \text{believe}(y, \text{know-at-t}(x, \text{Ans}(\text{Q})))$. *Q*, where *t* is the time of utterance. That is, *kke* introduces the presupposition (in brown) that the speaker has forgotten the nucleus proposition and believes the addressee knows it. It can combine with SA_{ASK} in (27b) by an illocutionary level version of predicate modification with SA_{ASK} 's not-at-issue contribution to yield $\llbracket \text{kke-S}_{\text{ASK}} \rrbracket = \lambda Q \lambda x \lambda y: \text{Ans}(\text{Q}) \in \text{CG at } t' < t \wedge \neg \text{remember-at-t}(y, (\text{Ans}(\text{Q}))) \wedge \text{believe}(y, \text{know-at-t}(x, \text{Ans}(\text{Q}))) \wedge y \text{ puts } x \text{ under obligation to ASSERT}(\text{Ans}(\text{Q}))$. *Q*. The contribution of the MQP *quick* should be handled in a way that it can apply to SA_{ASK} and $\text{SA}_{\text{COMMAND/REQUEST}}$ but not $\text{SA}_{\text{ASSERT}}$. This could be done by classifying the first two as requiring the addressee to *do* something and the adverb as a manner modifier. $\text{SA}_{\text{ASSERT}}$ seeks to affect the CG but does not require any action on the part of the addressee.

19 An astute reviewer asks why *believe* could not take an interrogative complement once the answerhood operator in (22) applies to it. A possible line of explanation may be to take embedding predicates to optionally select (as in the case of responsive predicates) for Ans-D or not (as in the case of uninterrogative predicates). Issues related to selection, however, are very much under debate and will be discussed in

section 6. For present purposes, though, we can see the usefulness of clause-typing in predicting the core generalizations regarding embeddability.

20 We know, of course, that this paradigm does not apply crosslinguistically. Amharic, Uyghur, and Magahi are examples of languages that are known to allow indexical shift in subordinated contexts. For such languages different diagnostics would have to be used to empirically ground the distinction between subordination, quasi-subordination and quotation.

21 Note that a rogative predicate like *depend on* that does not allow embedded inversion does not manifest shiftiness: **Will Sue come does not depend/depends on Mary.*

22 The following contrast between extraction and sequential scope marking provides a particularly clear demonstration of what I'm calling attitudes *de se* towards questions (see Dayal 1996 for a basic description of sequential vs. subordinate scope marking):

Context 1: Two strangers are at a bus stop waiting for a bus that seems to be late. Speaker A can say to the other person at the bus stop: "When do you think the bus will come?" or "What do you think? When will the bus come?"

Context 2: Speaker A is at the Reference Desk in the library but the Reference Librarian is not at their desk. After waiting for a while, Speaker A goes up to the librarian at the Circulation Desk. They can ask "When do you think the Reference Librarian will get back?" but not "What do you think? When will be Reference Librarian get back?"

Nothing in the analyses of scope marking currently on the market explains this contrast. The key difference is that in context 1 the addressee is likely to be actively interested in the answer to the question but not in context 2. I leave this here as additional evidence of attitudes *de se* to questions, without implying any formal connection between scope marking and embedded inversion.

23 Note that a 3rd person as matrix subject does allow for quasi-subordinated interrogatives. To see this, imagine a context where the Department Secretary comes out of the Chair's office and says to the graduate secretary who is in charge of the records, clearly waiting for a response: *The Chair has forgotten did Ann get A's in her first year courses?* There are two points worth noting here. The first is what we have already established for first person pronouns, matrix clauses with *forget* do not necessarily disallow quasi-subordinated interrogatives. Two, while it is the subject *the chair* who desires information, Speaker_C is also invested in the quest, at least as the Chair's representative.

24 The effects on embedded inversion with discourse participants as matrix arguments in the case of interrogatives is in keeping with observations that have been made in the literature about embedded root phenomena more generally. Hooper and Thompson (1973), for example, note that a tag question can be formed with certain verbs when the subject is a 1st person pronoun but not when it is a 3rd person: *I suppose/*Gloria supposes [acupuncture really works, doesn't it?]*

25 A reviewer asks why modals in matrix clauses cannot ameliorate unacceptable cases of quasi-subordination: *Mary *knows/*might know [was Henry a communist↑]*. The interaction with modals is another aspect that bears further investigation. Very briefly, Stephenson (2007) notes that the knowledge relevant for matrix epistemic modals is that of the speaker, while I am connecting quasi-subordination with the knowledge state of the matrix subject (see also Crnič and Trinh 2009). It is not possible to do proper justice to the various factors affecting epistemic modality within the scope of this paper but for the record, a few speakers I consulted accepted the example. Imagine the following context: McCarthy's minions are really interested in nailing down suspected communists but they have hit a wall when it comes to Henry. They are scratching their heads wondering who they could approach to get relevant information. In this context perhaps one could say *Sue might know↓ was Henry a communist↑*. Certainly, they could say *Might Sue know↑ was Henry a communist↑* but that would not address the reviewer's point.

26 Truckenbrodt (2012:2042) provides a particularly convincing argument from elliptical utterances for connecting rising intonation with questions and falling intonation with assertions:

- (i) Context: John and Mary are taking a break from work. John is getting up and looks at Mary.
 - a. John: Coffee [↑] (expressing: "Do you want coffee?")
 - b. Mary: Coffee [↓] (expressing: "I want coffee.")

At the same time, the article emphasizes the need for flexibility when discussing the semantic/pragmatic implications of boundary tones. The reader is directed to the article for discussion and references.

27 We must also make room for crosslinguistic variation as there may well be languages where prosody does not play the same kind of role that it seems to do in English (see Kratzer and Selkirk 2020, for example).

28 The color on the arrow locates the boundary tone at the level at which it is being posited: red for SAP, blue for PerspectiveP, green for CP. The direction of the arrow indicates that the matrix boundary tone in matrix alternative questions is a final fall, though we will see a variant of this in the next set of examples. This

departs from the practice I have followed so far of using ↑ as an umbrella for matrix intonational contours. This deviation is necessary because the argument in this section rides on the difference between a final fall and a final rise.

29 The distinction I am making here is in line with the following from Büring (2016:222): “Anything that involves a whole statement is a clause-level, or propositional meaning . . . Whether or not something is given, or salient, on the other hand, is a phrase-level meaning, as constituents of any size and category may be given.”

30 Dan Goodhue (p.c.) points out that the contrast between (55) and (57) holds even on a polar question interpretation of the embedded Q, namely one with a final rise on the embedded Q.

Kyle Rawlins (p.c.) raises the question about quasi-subordinated vs. subordinated versions of a polar question embedded under a polar question:

(ii) [Does Sue remember↑ [was Henry a communist↑]]

(iii) [Does Sue remember↑ [whether Henry was a communist]]

(iv) *[Does Sue remember↑ [whether Henry was a communist↑]]

While I am relatively confident that there are two distinct boundary tones in (ii), it does not seem to me that (iii) has a final contour that is specifically associated with the embedded CP of the kind shown in (iv). The prediction, at least, is that (iv) will be ungrammatical. But, of course, paradigms such as this should be further explored and intuitions verified experimentally. To the best of my knowledge, such work has not been done for alternative questions but Truckenbrodt (2012:2066–7) mentions two studies, one on Brazilian Portuguese and one on Gungbe, that indicate the kind of investigation that should be conducted to tease apart the issues of relevance to the present proposal about the interrogative left periphery.

31 There is general agreement that declarative questions and interrogative questions both have a final rise, and that interrogative questions in contexts that bias the speaker towards a particular answer also have a final rise. Whether there is something in the prosodic profile of biased questions that can be used to separate neutral interrogative questions from biased questions (interrogative or declarative) has not, to the best of my knowledge, been investigated systematically. For this reason, I restrict myself to the final rise in discussing biased questions with interrogative and declarative syntax.

- 32 I gratefully acknowledge the help of Sarmad Hussain in experimentally probing the Hindi-Urdu facts. See also Dayal 2016:268–9, 278–9 for some brief comments on bias in Hindi-Urdu declarative questions. See Büring 2016:219–23 for Italian, as well as for references and discussion related to various nuances in the prosodic profile of declarative questions in Bangla (aka Bengali), a South Asian language like Hindi-Urdu.
- 33 The dot notation comes from Reese and Asher 2009, Asher and Lascarides 2001 but is not dependent on the particulars of their account of biased question. I use this notation for perspicuity. The account I sketch for biased questions is consistent with the semantics of illocutionary acts in Krifka 2014, which is also what I used in section 2 in talking about the speech act of information-seeking questions and their modification by MQPs. The fall associated with CP_{-WH} is ratified by the first member of the combined speech act, signaling tentative commitment. The rise associated with SA_{ASK} signals the discourse move that puts the addressee under obligation to provide confirmation. I should clarify that Reese and Asher (2009) and Asher and Lascarides (2001) propose the complex speech act ASSERT•ASK for tag questions.
- 34 There is some overlap with Bhadra 2020, who is concerned with the possibility of neutral interpretations for declarative questions in Bangla, which also lack any overt syntactic cue identifying polar questions. I refer the reader to Bhadra 2020 and Davis 2009, which she draws on in her explanation, for details. Note that on the account presented here, declarative questions are expected to be felicitous in contexts conducive to neutral question readings as well.
- 35 In Dayal 2016:268–9 I made a tentative remark that such biased questions may not lend themselves to embedding and also noted that their acceptability may be contingent on factors that I have identified as relevant to quasi-subordination. I leave the exploration of embedded negative questions within the framework of an articulated interrogative left periphery for the future.
- 36 The set of alternatives can also be flattened into a proposition level meaning and embedded under predicates that only take propositions (see Kratzer and Shimoyama 2002:6). As we noted in Bhatt and Dayal 2020, there are two types of disjunction in Hindi-Urdu, *ya:* which is acceptable in both interrogative and declarative clauses and *ki* which is only acceptable in interrogative clauses, so the flattening option is only available with *ya:*.

37 Crnić and Trinh (2011) show in what ways this kind of embedding mirrors matrix imperatives and in what ways it is distinct from subordinated infinitival complements. See Crnić and Trinh 2009 for a somewhat different analysis of this phenomenon.

38 It is not clear, however, that such flexibility is needed (see Kaufmann and Poschmann 2013 for discussion). Here I lay out the kind of flexibility that would have to be established empirically for the full force of the relational version of the jussive operator sketched here to be utilized.

Crnić and Trinh use the interpretation of the 3rd person masculine pronoun in (76b) to distinguish embedded imperatives from quotations. They also present (vii) to show that the indexical *that book* is anchored to the context of utterance but they do not address the status of the 2nd person pronoun that is the hallmark of imperatives, here highlighted by the context sentence in (v):

(v) John says to Suzy, “Call **my** mother on **your** phone.”

(vi) Mary reports this as, “John said (told Suzy) [call **his** mother on **her** phone].”

(vii) John said buy **that** book (speaker pointing at a book nearby).

Making the interpretation of *pro* dependent on PRO and treating the person features on Jussive head in relational terms *addressee-of(x_i)* should result in a spell out of the person features that matches in gender and number with the indirect object in the case of quasi-subordinated imperatives. This is quite clear in the case of *tell* which has an overt indirect object. What I cannot tell is whether this is as clear in the case of *say* and whether *tell* is a quasi-embedding predicate for imperatives.

If it turns out that the addressee in the reported and the utterance context must be the same, as suggested by Kaufmann and Poschmann (2013), the relational approach would still be needed in an approach with a Jussive head. The restriction on the identity of the two addressees is a constraint that I believe would have to be imposed on any approach that deals with embedded imperatives (see the discussion of *The Addressee Constancy Requirement* in Kaufmann and Poschmann 2013).

39 I thank Magda Kaufmann, Paul Portner, and Raffaella Zanuttini (p.c.) for discussion of these issues, though I hasten to add that I do not mean to imply that they are in agreement with the views I have sketched here.

40 There is a large literature arguing in favor of a syntactic role for a sentient head, starting with Speas and Tenny (2003). I choose to focus on Zu’s proposal because of her claims regarding the (un)embeddability of the Speech Act layer and the Sentience layer.

41 Zu also shows that quiz questions and rhetorical questions, which on her account do not have the addressee as the SoK, require disjunct verbs. I discuss rhetorical questions in section 5.3 in more general terms instead of trying to model them on Zu's analysis, given that the connection between my proposal and hers remains underdetermined because of the lack of relevant data, as discussed immediately below.

42 Of course, to ensure that these are not some kind of quotations, we would need examples with appropriate pronouns. The tentative proposal here captures the intended discourse effect through its not-at-issue content, and the fact that rhetorical questions can actually be answered, as argued by Caponigro and Sprouse (2007), by its at-issue content.

43 For current perspectives on complementation, see Wurmbrand and Lohninger 2023 and references cited there.

44 In section 1.2 I classified *investigate* with *depend on*, *be up to*, and *look into* as rogative predicates that do not select clauses with inversion and used *depend on* to illustrate the point. Here I choose *investigate* as it is semantically closer to *wonder/want to know*. I would like to thank Rebecca Jarvis (p.c.) for confirming these and other data discussed earlier.

45 Similar considerations apply to predicates like *think*. Dayal 2016:145 gives the following contrast: *I am thinking/*thought whether to invite Bill*. See White 2021 for experimental data discussing the possibility of interrogative complements with *believe*, *think*, *hope*, and *fear*.

46 Recall that the PQP *kyā*: does not help in this connection, so either its position (as Bhatt and Dayal (2020) claim) or its semantics proves insufficient to clause-type the CP as +WH.

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